University News

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R.D. PATHAK & S.K. TRIPATHI

Information Technology and Value Based Education

S. JASWAL & RIPPEN GILL

Entrepreneurship in Home Science

V.K. JAGAJEEVAN & S.B. SINHA

Collection Development in a Networked Environment for IITs

FOLKLORE STUDIES

AREA STUDIES PROGRAMME

REVAMPING AGRICULTURAL EDUCATION

NATIONAL ACADEMY OF LEGAL STUDIES

TWAS GRANTS FOR SCIENTIFIC MEETINGS

Association of Indian Universities

Shastri Indo-Canadian Institute

Fellowships for Canada, 1999-2000

I. The Shastri Indo-Canadian Institute, with funding from the Canadian International Development Agency, invites applications from established Indian Scholars in the area of development and the environment, social and economic reform, private-sector development, and gender and development; for the following fellowships :

a. Development Studies
Duration : four months between 1 September 1999 and 30 April 2000

b. Women and Development
i) Faculty Research Fellowships
Duration : four months between 1 September 1999 and 30 April 2000
ii) Doctoral Research Fellowships
Duration : upto eight months between 1 September 1999 and 30 April 2000
iii) Pilot Project Awards
Duration : upto two months between 1 September 1999 and 30 April 2000
iv) Visiting Lectureships
Duration : three-week lecture tour in Canada between 1 September 1999 and March 2000

c. Media Fellowships : For mid-level journalists in print and electronic media
Duration : four months between 1 September 1999 and 30 April 2000

Since these awards are a part of the Institute's Development Studies Programme, work to be carried out during the tenure of the fellowships must have a clear developmental significance.

General Eligibility : Candidates must be
i) citizens or permanent residents of India,
ii) have a clear and focused plan of work which can reasonably be implemented during the tenure of the fellowship, and
iii) be prepared to leave for Canada no later than 1 January 2000 if selected

Value :
i) excursion rate return air ticket between India and Canada.
ii) $ 500 for books and personal effects for Development Studies and Women and Development nd $ 1000 for Media fellowships
iii) a living and accommodation allowance

II. The Government of Canada, through the Shastri Indo-Canadian Institute, invites applications from Indian scholars in the following three categories :
a. Canadian Studies Faculty Research
b. Canadian Studies Faculty Enrichment
c Canadian Studies Doctoral Research

Eligibility
Applicants in all categories must be citizens or permanent residents of India and proficient in either English or French Repeat applications for faculty awards will not be considered until the objectives of the earlier award have been demonstrably achieved

a. Faculty Research/Faculty Enrichment
b. Faculty Enrichment

These awards are intended to fund a visit to Canada of four or five weeks' duration to work on projects identified by the applicants The projects should lead to the publication of scholarly articles in India in the case of research awards and the development of courses on Canada in Indian Universities in the case of enrichment awards. Preference will be given to projects which focus on topics in the social sciences and the humanities which must lend themselves to enhancing the understanding of Canada, or of the Canada-Indian relationship, in India

Applicants will normally be full-time members of the academic staff of a recognized institution of higher education or an equivalent degree-granting organization in India. Faculty Research applicants may also be scholars at research and policy institutes in India or professors emeritus Applicants should hold a degree equivalent to postgraduate qualification Applications will be considered from those without these formal qualifications only if successful research and teaching experience can be demonstrated Applicants able to provide evidence of their interest in or involvement with Canada prior to the application will be preferred This may be demonstrated by courses already given, research undertaken, extra-mural activities, active membership in relevant organizations, etc

Please note that all successful applicants in both faculty categories will be required to attend a Canadian Studies summer-institute-cum-orientation session for five to seven days in May or June 1999 at a location in Canada to be announced The remainder of the award period will be spent working on the projects proposed in the applications

c. Doctoral Research (Canadian Studies Graduate Awards)

These awards are intended to fund research in Canada for a period of upto ten months on the applicants' doctoral dissertation Preference will be given to applicants whose dissertations focus on topics in the social sciences and the humanities, which are most likely to advance understanding of Canada in India. Applicants must be enrolled as doctoral candidates in a recognized institution of higher education or equivalent degree-granting organization and must expect to have completed non-thesis requirements of the Ph.D by the time the tenure of the award commences

Please write for the application forms and detailed guidelines by sending a self-addressed Rs 15/- stamped envelope(s) (size 26 cms x 30 cms) superscribing the name of fellowship to :

Shastri Indo-Canadian Institute
5, Bhai Vir Singh Marg
New Delhi-110 001.

Please send a separate stamped envelopes for each fellowship application.
Deadline for request of appliation forms : September 30, 1998 by post and October 5, 1998 in person.
Deadline for receipt of completed applications : October 16, 1998. (5.00 p.m.)

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IN THIS ISSUE

Information Technology and Value Based Education 1
Entrepreneurship in Home Science 8
Collection Development in a Networked Environment for IITs 11
Campus News
Seminar on Welfare of the Aged 20
National Academy of Legal Studies 21
Folklore Studies in North-East 22
West Bengal Plans Techno Varsity 23
Agriculture
Revamping Agricultural Education 24
News from UGC
Countrywide Classroom Programme 24
Guidelines for Area Studies Programme 25
News from Abroad
TWAS Grants for Scientific Meetings 26
Book Review 27
Theses of Month 30
Current Documentation in Education 33
Advertisements 35

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Editor :
SUTINDER SINGH

Information Technology and Value Based Education

R.D. Pathak*
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Introduction

The galloping advances in science and technology and their applications in a developing country like India, particularly in the later half of twentieth century, have influenced lifestyle of the people and caused major changes in values. The minds of the youth are captivated by the western culture projected on the small screen through the satellite TV. Life has become faster and more complex and people have little time to contemplate on the perennial strengths of our ancient culture and heritage and erosion of human values. The shift in attitude from spiritualism towards materialism is causing a never ending race to acquire the latest items available in the market as the line dividing the concept of need and luxury is getting thinner.

The minds of people are captivated by the onslaught of Information Technology (IT) revolution. The internet phenomenon as information superhighway has resulted in the availability of tremendous amount of desirable information as also some element of undesirable information, e.g , the access to pornographic material and information that can be used for committing certain crimes like frauds and bank robberies, at certain internet sites. Free access to such information is a source of negative influence on impressionable minds of the youth, the results of which can be seen quite clearly by the events taking place in our society. Video and software piracy are the common trends to acquire the latest from the world market Commercial approach seems to have overtaken the human approach everywhere with utter disregard to the consideration of the results.

Impact of IT Revolution on Values

IT Revolution and Value Erosion in the Society

We are living in an era in which human knowledge, particularly scientific and technological knowledge, is increasing at an exceptionally rapid pace. This in turn is having profound impact on social, economic and political evolution (*Singh M.*, 1997).

The world today is in transition from industrial age to information age. The IT revolution is making a tremendous impact on the society by relentless technology innovation, massive growth in computer power, worldwide networks and evergrowing electronic factories. A turbulence is being experienced in the country in the field of IT, with opening up of national economy to integrate with the global mainstream for latest technology knowhow. Computers, modems, FAX machines, scanners, multimedia and Internet are fast becoming common items of use for which suddenly a great potential is being felt in so far technologically backward country.

The telecom sector has witnessed major technological innovations

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with the introduction of mobile communication, value-added services and digital audio and video broadcasting. The convergence of telecom and computers in networks has further advanced the scope of communication equipment by bringing a wide range of improved products. This sector is likely to experience a substantive boost in the coming years due to liberalisation as a result of national telecom policy, which aims at providing access to basic telecom services of world standards at affordable and reasonable prices.

The effect of IT revolution is being felt in all parts of the country and all sections of the society. Satellite TV is beaming its programmes even in the remotest parts of the country and telecom network is offering its facilities to most of the cities and villages. Due to liberalisation of the economy in the nineties, the IT industry has progressed suddenly with a quantum jump to come at par with the world standards. The evolution of the technology is felt to have taken a leap from 19th century directly to the 21st century, without going through the proper evolution sequence via the 20th century. As the culture of the society is also influenced by the technological advancements due to changes in lifestyle and concepts, a sudden shift in the values is being experienced. The modern communication media offers in very attractive ways, all sorts of stimuli and inputs about what to believe, how to behave, what models to follow, what type of lifestyle to copy etc. The peer group influences, ideologies of the political leaders, film stars, sports figures, each add to the confusion of the confused mind and pose a dilemma to the young person today.

The erosion of human values today, has become a phenomenon. There is a maddening pursuit to acquire wealth, power and status to the total exclusion of humanness in us. We have become victims of our own ego. Though we talk of our rich ancient culture with pride, yet in reality that has remained shrouded in the pages of our scriptures, and increasing practice of sermonising Vedas, Upnishads, Kuran or Bible in public life and pep talks in high society clubs and five star hotels is nothing but a manifestation of our self-deceipt and complacency. In public life we advocate rationality, democracy, secularism, and scientific temper but in private life we follow blind rituals, guided by superstitions, orthodoxy and communal considerations. The Upnishads have taught us the ideals of *Vasudhaive Kutumbkam* (the entire world is my family), yet today we fight among ourselves in the name of religion, region or race (*Dagar*, 1997).

The mechanics of collecting, documenting, accessing and deliberating over knowledge have begun to undergo a radical change. Anyone can see how the tranquility of millions of homes is being threatened by TV, FAX, e-mail, Internet, Cyberspace and other satellite based communication technologies. With the globalizing effect of IT revolution and resultant globalizing of knowledge, what will happen to the great variety of socio-cultural norms and organisational structures existing in India today. The identity of our uniquely different lifestyle, culture, values and individuality is under threat today and there are chances of people anywhere in India, becoming clones of the people with western culture of the developed countries (*Pylee*, 1997).

IT Revolution and Value Erosion in the Industry

IT — a common label given to computers, software and telecommunication technologies — has invaded the work place. According to a model, benefits from IT can be at several levels which are localised exploitation, internal integration, business process redesign, business network redesign and business scope redefinition (*Venkatraman* 1994). This evolves into a need to restructure relationships among different layers of management and employees and thereby results in rising professional rivalries and widening communication gaps between these layers.

Some useful pointers to its application and use are given below (*Gotlieb*, 1990) :

- Before this technology can be exploited to its full potential, quite a few other adjustments are needed. For example, *empowering people* — IT can provide a competitive advantage only when the people are given more responsibilities and power is shared.
- One area where IT can make significant improvement is *customer service* as the banks and airlines have discovered. IT can relieve human resources from routine activities so that they can be deployed for more critical tasks, utilising their potential and giving them better opportunities for growth and development.
- Using IT, some organisations are now planning to make a wide variety of information available to their emloyees, providing them with an *info-armour.*

These pointers indicate towards need to reduce manpower, changes in power structure and eruption of new inequalities. The resultant rise in unhealthy competition leads to practice of non-ethical means in a never ending race to reach the top and erosion of all values in the industrial world begins.

IT has made a visible impact on the industry and its management. Automation of machinery and management functions has created the need for a special type of workforce — information system managers and thus opening new avenues for the specialist type of manpower. To meet the demand of the industry, numerous private institutes have sprung up in almost all parts of the country. The quality of education provided by these institutes is not regulated by any agency for which exorbitant fees are being charged from the young aspirants.

IT provides facilities to automate the information systems in any organisation. Information systems, as per traditional point of view, essentially support the organisation. However, now it is the other way round, i.e., organisations often adapt themselves to changes in information systems. The content of information and the technology involved often defines the power structure, the extent of delegation and the extent of centralisation in the organisation (*Buckland,* 1989). Automation has resulted in flattening of organisational hierarchies and downsizing of workforce. This further enhances the competition and need for the skilled manpower. Within the corporate world, few managers have acquired computer-handling expertise and others have remained non-experts. The widening communication gap between these two groups (experts and non-experts) is resulting in the escalation of professional rivalry (*Rawlings,* 1988) viz. practice of non-ethical means to acquire the winning edge in the cut-throat competition thus causing erosion of human values in these organisations. For example, computer networking facilitates access to confidential information of any organisation provided the intruder is an expert hacker and is able to break the software firewall security. Theft or damage of classified data is not an uncommon practice in rivalry of business organisations. The ambition to rise up the ladder of success makes people neglect all values and join the rat race where the rules don't exist and no means are considered unfair.

Need for Value Education

The onslaught of technology, and its effects on society and industry, is an ongoing phenomenon and this trend cannot be reversed. The loss of values in our society is a cause for serious concern. It deserves adequate attention and corrective measures need to be taken before this trend threatens to destroy the very fabric of our society. However, before beginning these corrective actions, we will have to modify and depend upon our education system to ingrain the right *Sanskara* in the young minds. To achieve this aim, there is a need to introduce value education to prepare the minds of the youth to face this threat so that they are able to take the right decision in the hour of dilemma. The value education needs to be introduced in universities as well as in the management institutes.

In the process of learning different curricular subjects, one comes to imbibe certain values, habits of thought, qualities of mind that are concommitant to the pursuit of that particular knowledge field. In other words, value education spans the entire learning, cultivation of imagination, strengthening of will and training of character. When we so relate the values to education, we can identify the approach as one of integrating values into the very fabric of education.

Value can be defined as 'Conception, explicit or implicit, distinctive of an individual or characteristic of a group of those desirable traits which influence the selection from available modes and ends of action.' Values are the criteria for determining levels of goodness, worth or beauty (*Shetty,* 1997).

National Policy of Education (1986) emphasises the values as "The growing concern over the erosion of essential values and an increasing cynicism in society that has brought to focus the need for readjustments in the curriculum in order to make education a forceful tool for the cultivation of social and moral values." It also indicates towards advances in science and technology as being the cause of changes in the lifestyle of people as well as accompanying erosion of values.

The need for value education has been emphasised time and again. The question is 'How do we go about helping our youth in value development through the process of value education. Teaching values through moralising and advising seems to be ineffective today and narrating stories has its charm only for the moment without any attitudinal changes (*Shetty,* 1997). The paradox is that while the parents through their conduct and example offer one set of values, religion proposes yet another set of moralisation. Similarly, our institutions of learning are no doubt preparing efficient individuals but not good citizens or humans. The only solution in this dilemma lies in modifying education that is rightly conceived and properly practised, and is value oriented.

To distinguish between the moral education and religious education, it can be said that it is possible to live without a religion but it is unthinkable to live without a set of values that guide our behaviour. Also, a moral education derived from or linked with religion should be authoritarian whereas education as a concept is anti authoritarian, for it allows to think on our own and thus to be autonomous. Linking morality with religion is unacceptable because it denies to the individual the right to choose the principles of morality according to his own thinking in particular situation of moral dilemma (*Dagar,* 1997).

Types of values to be introduced in the education system can be :

1. *Human values* — what is enriching and good for the individual. These are practised by individual alone, irrespective of his/her social relationships.

2. *Community or social values* — what is good for the society. These values discuss the basis of the relationship of an individual with other people.

3. *Cultural values* — which involve the survival of the culture. The practice of such values is very essential for the growth and survival of any culture.

4. *Institutional values* — include political and moral values (*Shetty*, 1997).

Values in University Education

Children catch their values through the atmosphere and are infected by courage and cynicism, love and hate, generosity and meanness, snobbery and kindness, selfishness and unselfishness. The formal part of school and college programme has very little to do with such values because in former schooling the teacher's main concern is to inculcate knowledge only. Value education, on the other hand, means a positive effort for bringing about a synthesis of physical, intellectual, emotional, aesthetic, moral and spiritual values in a human being.

In India, National Institute of Educational Planning and Administration (NIEPA), National Council for Educational Research and Training (NCERT), University Grants Commission (UGC), Planning Commission of India (PCI), All India Council For Technical Education (AICTE) etc, have been striving hard to prepare policy guidelines on educational standards, human values, role of various institutions and individuals to manage the educational institutions with dignity and decorum for establishing high standards and values. In spite of several measures, researches reveal that the education standards are falling, values are declining in various universities, colleges and schools all over India (*Raju*, 1997).

Value based education is required at all levels of education in India. Here, the role of administrators, teachers and supporting staff is very important to build culture and quality of the university environment by following Indian ethos. Particularly, the administrators have to play a key role in maintaining quality and standards in education system. They need to be broad minded, free from certain weaknesses to build strong structures and systems in the institutions. While the *students*, on one hand, need to maintain strict discipline, peace and devotion towards their duties by evaluating teachers rationally and extending their co-operation in all innovative methods of curriculum; the *society*, on the other hand, has to participate in the educational programmes of the universities and suggest new areas of education as per the changing needs. Above all, the *press and people* have to play a crucial role in changing mindset of administrators, teachers, staff and students to establish high standards and values.

Of singular importance today is the fact that teaching/learning strategies have to be proactive making use of the incentives allowing for multiplicity of concepts and conflicting views and adopting problem solving techniques. The teachers' role is to change from teacher to facilitator. They have to teach learner how to select information, process and synthesise it and how to find one's way in conflicting and contradictory situation. They have to facilitate the students taking advantage of easy access to the infinite stock of easy information and knowledge to promote their vision of the world and role in the society. When the environment changes so fast, the teachers are required to help students find their roots, build references, and gain strength to adapt themselves in an increasingly complex world in continuous evolution (*Raju*, 1997).

A difficulty, thus, arises in deciding about the way the content of morality is to be taught. There is enough empirical evidence to show that all attempts at direct moral teaching resulted in failure in regard to development of moral behaviour. Moral traits like honesty, truthfulness, consideration for others etc cannot be effectively inculcated by direct instructions. Those who received such direct moral education did not prove to be any more honest or truthful than those who did not receive any such guidance (*Dagar*, 1997). Evolution of proper value system, therefore, has to be facilitated rather than imposed from above or sermonised from pep talks quoting from religious scriptures.

We should consider educating our teachers in moral education before the same can be introduced in our schools, colleges and universities in a worthwhile manner. They should be oriented via special orientation courses, which include experimental workshops, field work, seminars and extension activities based projects. In order to enable them to obtain a right perspective on morality, they may be provided with enough self-developing material and books on the subject. "Proper preparation and orientation on the part of the teachers is essential in regard to their motivation as well as developing an insight into nature of morality and an effective methodology of teaching, and appropriate techniques of appraisal of development" (*Dagar*, 1997).

Values in Management Education

In order to protect human values, some management institutes are imparting value-based education. Several management institutes and universities in India have included some subject to value orientation as Business Ethics or Management of values, or Indian Ethos in Management.

There are three models of eduction in the context of managerial world. The first one can be called a Pragmatist's model. It provides for practical education for a practical businessman. Its developed form includes interpersonal communication and negotiation skills, working on computers and playing smart in business.. This model excludes the higher emotions of love and companionship, human values in life, and social responsibility. Twentieth century saw an alternative to the first model, as the second model called Pragmatist model, viewing the manager as a professional and not as a businessman or a bureaucrat. The third model, known as the Humanist's model, is based on the premise that all organisations function as human systems, and therefore, elements such as emotions, values and intuitions need inclusion. In 1990, the revamped MBA programme of the Harvard Business School labelled it : *Leadership and Learning*. This revamped programme is focused on three areas of learning : values and qualities, skills, and the knowledge, in that order (*Singh S.P*, 1977)

There is a need for the management education to redefine its aim, to have values and national priorities. It has expanded widely and acquired an urban bias. It creates lack of service-mindedness in the managers and dissimilarities in the managerial and the national cultures. It should restructure its functional priorities, staying consistent with the values in human life and the national ethos of the country. There is a need to develop a sense of national cause, pride and involvement among the management trainees by means of value oriented management education system.

Value Oriented Management Education

Management education and training in our country has contributed significantly in terms of providing a steady stream of trained managers. But in this process, we have relied heavily on ideas, concepts and theories based on foreign models of management. While we should borrow ideas from any country that produces original thinking on the subject of management, we should try and adapt it to our own milieu, particularly in the area of HRD. The management education should be imparted reflecting assumptions, values and economic considerations characterising Indian environment. A few recommendations in this field are :

- Inclusion of a few value oriented items in the admission tests for management programmes.
- Organise symposia and seminars, by the students, on contemporary social issues.
- Exposure to socially backward areas and non-business organisation through projects.
- Encourage extra curricular activities to promote *esprit-de-corps*.
- Arrange special lectures by persons actively involved in social work.
- Organise faculty development programmes to expose the teachers to value oriented education system
- Include value oriented programme implementation efforts in the placement brochure for the information of business.

Based on the Indian ethos and current social and economic realities, following values are recommended to be included, in the given order of priorities, during MBA programmes in our country (*Pathak*, 1987) :

1 *Service mindedness* or concern for all segments of the society. This shall enable the students to repay the debt to some extent, which parents, teachers and the society have invested in managers while educating them in a poor country like India.

2. *Excellence in work* · The managers should be trained to acquire perfection in their work. The key lies in the ability to concentrate on the work in hand at the present moment, without being distracted by the thought of results or rewards in the future.

3. *Courage* in a leader takes him towards choosing the right path with a touch of heroism. It also teaches him to be able to sacrifice and to experiment with life, without the fear of outcomes.

4. *Integration* depicts steady performance amidst influencing forces of public and social life. It would imply consistency in thought, speech and action.

There is nothing uncommon about being creative and innovative about human values because they as well as corporations exist as part of the nature. It is the nature's law that when something is jettisoned for the sake of another, the denied one reasserts with redoubled vigour. The advancement that has taken place on the material fronts had been at the cost of moral and emotional fronts. Lately, as we stand at the threshold of 21st century, we are witness to explosion in all frontiers of technology, knowledge and information. In the process, seeds of emotional revolution have been sown. It is, as if, mankind were surfeit in the advancement in the material front, and in order to set things aright, has embarked on an exploration into the realms of information and knowledge and lately, of course, emotion and spirit (*Kabir*, 1997).

Education System to Manage and Exploit Technology

In the past, the educational processes were not confronted with the kind of challenges that have to be faced today. Today, technologies are changing much more radically and rapidly then ever before. These technological changes are resulting in changes of not only tools, the infrastructure and work related activities, but also in the organisational structures, demographic profiles and even the concepts associated with the national identity and sovereignty. As the challenges of the coming decade are going to be quantitatively as well as qualitatively different from contemporary challenges, therefore, the processes and contents of education too will have to be significantly different from what these are today. Obviously the education system will have to train people not only for the present but it has to prepare them essentially to meet the challengs of the future. Inadequate and improper management of technology disrupts our social system as well as the business environment causing loss of values. Technology management education emerges as suitable answer to meet these challenges. We have to train our young managers to become capable of handling technologies of the future.

A well designed education system can be a powerful factor for the empowerment of poor people and far promoting the goal of equality of opportunity. Unfortunately, our education system does not live up to these ideals. Outlays on education fall far short of requirements. In a country where resources are scarce, education budgets will continue to be starved of funds unless there is willingness to give up large-scale implicit and explicit subsidy finances. If we do not achieve universal access to quality education, affirmative action by way of reservation in public services and legislations for the disadvantaged groups can achieve only limited results in combating their inherited social and economic disabilities. Moreover the potential of our university system will also not be fully realised if a large population of our children do not have access to the quality school education (*Singh M.*, 1997). Properly harnessed, new technologies can be a powerful instrument for the eradication of mass poverty, ignorance and ill health which afflict a large segment of our population. Telecommunication, satellite and IT can greatly add to the effectiveness of mass literacy and public health awareness campaign. Combined with value oriented education in universities and management institutes, technologically supported education system will be a powerful instrument towards building a stronger society and shaping the national destiny.

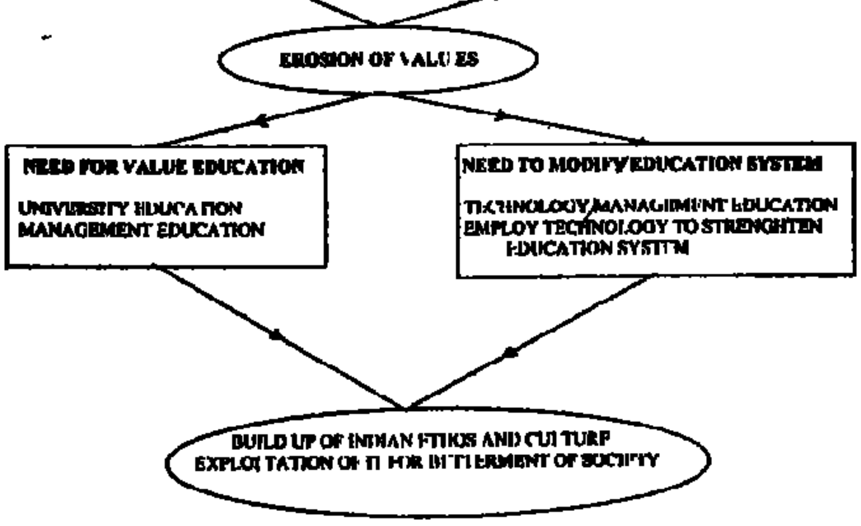
The institutions concerned with various levels and kind of education will also have to undergo radical changes. If this is a reasonable assumption, then a serious effort need be made to visualise these changes and start working well in advance for preparing for the structural and methodological changes visible on the horizon. By use of computer networking, universities/colleges working together can become a way of life for mutual benefits and national interest. Non formal education system, for example, distance education based on electronic media, has to develop faster to cope with increasing demand for higher education. Extensive use of information media both in management and in education through information network, TV and audio-video devices should become necessary both to reduce cost and also to get the sought after experience from any part of the world (*Pylee*, 1997). Automation and networking of libraries also emerge as suitable areas of technology exploitation to strengthen the education system.

Thus, there is a need to modify our education system to be able to manage and exploit technology. Introduction of technology management education in our management institutes will prepare our young managers to take proper control of the situation in a technology intensive environment. At the same time, uses of the technology should be exploited to strengthen the education system by employing IT as an education delivery tool, for automation and networking of the libraries and to support distance education programmes in providing equal opportunities of education to all.

Conclusion

With the liberalisation of economy, we are in the process of a rapid evolution from being a technologically backward country towards being at par with rest of the world in the 21st century. This sudden transition is causing erosion of values and threatening to destroy the very fabric of our society. IT, being a double-edged weapon, has to be managed carefully for the progress of the country but at the same time, preservation of values and culture has to remain our prime concern. This can be realised by suitably amending our education system to plant the seeds of values in the young and impressionable minds of our youth. Indoctrination of the youth to imbibe values is the responsibility of all sections of the society including parents, teachers, administrators and the media. Another trend, which is a serious cause for concern, is that after acquisition of higher education in the country, the bright young men migrate to western countries in search of greener pastures without any consideration of repayment of the debts of the parents, *gurus* and the country. This trend indicates a general shift in attitude towards materialistic values with no emphasis on values of sacrifice and service to the community. This trend may be checked by bringing values and the national ethos in the education system.

The framework suggested here is that the IT revolution is causing a great turbulence in the industrial world and the society, resulting into loss of values. In the industry, it improves the overall business performance but at the same time downsizing of workforce, shift in power structure and increase in unhealthy competition causes erosion of values. Similarly, in the society IT has brought about many a great facilities but at the same time sudden onslaught of western culture, rapid rise of materialism and increased social inequalities have caused erosion of values. To overcome this negative fallout of IT revolution, there is a need to firstly, introduce values in the universities and management institutes and secondly, to modify education system by way of introducing technology management education and by exploiting positive features of IT to strengthen the education system. These measures will ensure preservation of values, build up national ethos and fruitfully exploit IT revolution towards building a promising future.


IMPACT OF IT REVOLUTION
INDUSTRY
DOWNSIZING
CHANGING POWER STRUCTURE
RISING COMPETITION
SOCIETY
RISING MATERIALISM
EXPOSURE TO WESTERN CULTURE
RISING SOCIAL INEQUALITIES
EROSION OF VALUES
NEED FOR VALUE EDUCATION
UNIVERSITY EDUCATION
MANAGEMENT EDUCATION
NEED TO MODIFY EDUCATION SYSTEM
TECHNOLOGY MANAGEMENT EDUCATION
EMPLOY TECHNOLOGY TO STRENGHTEN EDUCATION SYSTEM
BUILD UP OF INDIAN ETHOS AND CULTURE
EXPLOITATION OF IT FOR BETTERMENT OF SOCIETY

Technology can be immensely fruitful to the advantage of the mankind but at the same time, its side effects will have to be monitored carefully and corrective actions taken well in time. Our society is not an egalitarian value based society but a highly hierarchical society with a small middle class, a tip of rich and the bulk of poor class. This kind of structure is now being influenced by various forces including urbanisation, education, woman liberation and technology revolution. But the transformation of the hierarchical society to an egalitarian value based society is being accompanied by many social disruptions. Technology aggravates social disparities as we can see in our rural areas. These social problems are not due to technology but due to our poor management of technology. The rewards of the technology need to be effectively exploited for the betterment of the education system and the society based on egalitarian values.

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Entrepreneurship in Home Science

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Home Science Education, since its inception has been striving to improve the physical, social and economic environs of families across different settings. Recent social changes which the Indian society is experiencing could be attributed to the promotion of education and economic independence of women Lately, it has been realized that education of women is the key to bring positive changes in our prevailing social system which is full of stories of suppression of women. It is also being emphasized that if women remain uneducated, it could easily be assumed that half of the population is not participating in national reconstruction. Education is essential for emancipation of women. Education also brings economic independence which is important to empower women in all aspects of life Participation of women in income generating activities is also necessary because of economic pressures the families are facing to improve quality of life.

Education and participation of women in income generation has made their role more demanding than ever before. Further nuclearization of families has made it even more demanding and has challenged her traditional role. Traditionally, the women in the family have been rearing children, looking after the elderly and managing the household Now more and more number of women are joining work outside family and her availability at home for such tasks has decreased accordingly. Such families where mother/lady of the house is working outside need support for the care of children and elderly and also in housekeeping.

In this changed social senario Home Science Education has the potential of producing such trained manpower who could provide service/support to the families in a number of ways. Such support/service to the families calls for entrepreneurship/self employment.

Entrepreneurship is the ability to perceive an opportunity, the foresight to see scope for its exploration, the courage to undertake the task and the initiative and daring to take risks. An entrepreneur is therefore, an individual who carries out actions which result in innovations, or who introduces new production or distribution functions and who likes to take reasonable risk and has high degree of achievement motivation. He is capable of organising resources to overcome challenging ventures out of which he derives high levels of satisfaction.

Entrepreneurship may be regarded as a powerful tool for economic development of a predominantly agricultural country like India. Since Independence small scale entrepreneurship programmes have contributed significantly to the economic growth. Initially it was assumed that incentives in the form of physical capital and infrastructure would be sufficient to attract entrepreneurs to set up their own business class. This problem pointed out the need to create new generation of entrepreneurs who would be able to take advantage of the development opportunities provided This need for the creation of entrepreneurs from non-conventional sources gained further impetus with the spread of the idea that entrepreneurs from all sections of the society could be developed through proper training. Moreover, development of entrepreneurial culture among the students of Home Science institutions has been widely recognised by the developing countries as an important task in the field of social welfare and education. The State Agricultural Universities are spending resources for education and training of Home Science students. The question is whether these Home Science students are able to return back to their country the resources in the form of wealth or employment This can be done only if the Home Science graduates are able to become capable entrepreneurs, creating larger marginal wealth and employment for the unemployed.

Home Science is an interdisciplinary field of knowledge with focus on Food & Nutrition, Clothing & Textile, Human Development and Family Resource Management. Earlier it prepared an individual to obtain recent scientific information for dealing with life situations and to cope with day to day problems but today efforts are being continuously made to provide educational facilities to invigorate the theoretical knowledge of the students through field training and research labs so that they are able to launch entrepreneurship programme successfully.

The following entreprenurship programmes are proposed for Home Science graduates.

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1. Food and Nutrition

a) *Catering* : Entrepreneurial training could be provided in the area of catering to fulfil needs of the society. Training should focus on catering for large number of people so as to meet the needs of marriage parties, Kitty parties, and the parties arranged at homes and at special places like schools and hospitals. Besides this such a training will be very useful in running canteens in various kinds of settings. The trained personnel can also undertake catering services for those people who are working in factories, offices and do not have time or arrangements to cook meals, particularly mid day meals, while serving far away from home and cannot return home for lunch. Such type of services will be a boon to such people and if it is being done by a Home Science graduate, the quality of food could be ensured since they are fully trained in this respect.

In the recent years modernization has certainly brought changes in our life style. Mechanization of farming and provision of energy saving devices at home have given rise to many diseases occuring due to sedentary life style which is very common in urban setting. Diseases like diabeties and cardiac problems which could occur due to stress and sedentary life style are on increase. All these diseases could be managed mainly through diet. Training in therapeutic nutrition could be used to establish centres of special cooking which could cater to the dietary needs of people suffering from different diseases. Suitable training could be imparted in Physiotherapy and exercise. The combination of therapeutic nutrition and physical education would enable home science graduates to set up support centres for people with special dietary needs.

b) *Confectionery, Ice Cream Parlours and Bakery* : The home science graduages can set up Confectionery, Ice Cream parlours and Bakery centres so as to meet the increased requirement of these products. They can use innovative skills to evolve their own products which are nutritious and different from the previous ones and can add variety at breakfast time, tea time, tea parties and various other occasions.

c) *Preservation* : Preservation could be undertaken as entrepreneurial project to add variety of food accompaniments to all meals of the day. It seeks to preserve vegetables and fruits in the form of pickles, jams, jellys, marmalades etc. Small units could be established. The need to buy these preserves from the market would definitely increase keeping in mind the availability of time with women who traditionally were doing this task at home.

d) *Ready to cook/serve foods* : Entrepreneurial training could be given to establish units which could clean/cut/shell the vegetable so as to make these ready for cooking by the home manager. Secondly, a variety of salads could be prepared to set up salad bars along with fast food to promote healthy living.

e) *Guidance Centres* : Guidance centres could also be established where special advice could be given to the individuals for keeping fit through diet and exercise and management of obesity and other diseases.

f) *Hobby Centres* : Hobby centres could be started to train interested people in various culinary arts of various regions and continents.

2. Family Resource Management

The home science graduate acquires most of its management skills from the subject matter of FRM which is useful in managing the various aspects of entrepreneurial unit. Therefore the graduates can open up guidance centres where they can impart training in management of entrepreneurial units.

a) *Interior Enrichment Units* : The home science graduates could be imparted intensive training in the art of interior decoration so as to set up their own interior enrichment units. Such centres can provide services for decoration of various settings like offices, hospitals, schools, hotels, houses and restaurants etc alongwith need based space management.

b) *Hobby Centres* : Hobby centres could be started where interested persons could learn flower making, preparation of decorative articles, *Rangoli*, jewellery designing, pot making and painting etc.

c) *Grooming Centres* : This area has vast potential to develop, with the awareness created among masses by the media for keeping oneself well groomed. Training could be imparted under Home Science education to open grooming centres where they could provide hair/skin care services and can guide individuals according to their own unique characteristics to select jewellery/hair style/face make up.

3. Clothing and Textile

a) *Fashion Designing, Garment manufacturing and Boutiques* : Fashions in clothes change very fast and is more true today. People have become more conscious of dress sense and that is why intensive training in dress making if imparted to Home Science undergraduates could enable them to open enterprises like fashion designing, boutique and tailoring units. Such an endeavour will provide employment to the concerned person and would also help others to gain employment. Sustenance of such entrepreneurial projects is guaranteed in view of rapidly changing world of fashion.

b) *Quilting, Handicraft and Embroidery Unit* : Exclusive embroidery and handicraft units can also gain popularity. Clothing & Textiles unit of Home Science education will have to impart intensive practical training to the students to acquire adequate skills and knowledge for setting up such units.

c) *Dyeing and Drycleaning Unit* : Such unit can be managed by Home Science with adequate training. Dyeing of clothes like *Dupatta*, bed sheets, table covers, suit length, silks and woollens etc with traditional designs or motifs has become very popular. The art of dyeing will never come to an end atleast in our culture and therefore it promises success to the Dyeing units. People have ever more become conscious about taking care of their delicate clothes like silks and woollens and will never cease to get them drycleaned.

d) *Computer Aided Designing* : The clothing & textiles units of Home Science education could teach application of computer in designing variety of textiles and knitwears. Intensive training can help them open computerised entrepreneurial units in textiles and knitwear designing.

4. Human Development and Family Studies

a) *Child Care and Development Industry* : With increase in number of women participating in income generation activity outside home, care of children need support outside family. Children usually require care by adults till they are 14 years of age and should not be left alone at home. The Home Science graduates can be given adequate training in running Early Childhood Care and development units like day care centres, creches, nursery schools and after school care where quality care could be provided to children throughout the day or after school hours. Such centres would prove to be a boon to the working couples of nuclear families and would be a flourishing enterprise for Home Science graduates.

b) *Guidance & Counselling Cells* : It is a new area of entrepreneurship which has become meaningful in the wake of increased conflicts in families due to stress of various kinds. For various reasons people would like to take opinion of experts about their personal or family problems so as to improve the quality of life. Home Science graduates can be tarined to examine the cases thoroughly to find inter relationship between various factors to provide practical guidance to needy persons. India has yet to witness such a formal way of obtaining considered opinions outside their traditional guidance and counselling.

c) *Old Age Homes* : Increase in the grey population of the country and nuclearization of families compel many old people to stay in old age homes away from their families. Such old age homes can be managed by Home Science graduates where various kinds of activities could be arranged for old people with proper food services and psycho-emotional enrichment.

d) *Rehabilitation Centres for Children with Special Needs* : Appropriate training could make Home Science graduates to open rehabilitation centres for children with impaired senses. A country like India where approximately 10% of the population is handicapped, does not have adequate specialized centres for the care of such children. Home Science graduates can open such entrepreneurial rehabilitation centres which will not only be a service to the community but would help them create employment for themselves and others.

Home Science as a discipline is poised to take a quantum jump as the 21st century is likely to unfold new challenges at several fronts, namely, the family, the community and the consumer oriented market forces. Home Science graduates will need to balance community oriented services and the market driven demands to take up vocational programmes. It is hoped that suggestions given above will be helpful to students, teachers, entrepreneuers and planners.

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Collection Development in a Networked Environment for IITs

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Introduction

In the prevalent flood of knowledge production and distribution, it is extremely difficult for a single institution, howsoever strong it may be in infrastructure and funding, to cope up with the information deluge. An attempt is made to concretise a proposal for collection development in a network environment for IITs for all types of information resources. The implementation of such a task involves sufficient will of policy makers and active cooperation of the faculty as well as professional staff of the six sister institutions and IISc. Whatever is mentioned in this paper about IIT will include IISc also.

The six IITs were established at different regions of the country at different times for the development of human resources in applied science & technology. Since these institutes are autonomous, the current collaboration exists for student selection tests/faculty research etc and as far as library and information work is concerned, it has not gone to the level expected and is still limited to sharing to photocopies or lending books on Inter Library Loan (ILL). Though all the IIT libraries are sufficiently automated, and have electronic databases, one major hindrance for satisfactory sharing/networking of information sources is the lack of high bandwidth communication channels. So a realistic approach has to be worked out for a model of resource sharing, collection development, networking etc, taking into consideration the present communication and computing infrastructure as well as psycho-social aspects of manpower and users concerned.

Standards & Policy

For the effective functioning of any collaboration, well defined set of policies and guidelines have to be framed and agreed upon. All routine tasks are to be automated following mutually acceptable standards. Some of the IITs are using commercial software while some others have homegrown software for automating library routines. To give enough freedom to participating institutions, at the initial stage they were given an option to continue with their existing software, but they have to follow standards like AACR2 for cataloguing and DDC/UDC for classification. While making Online Public Access Catalogue (OPAC) data for new books and other reading materials, they have to make another catalogue data with Common Communication Format (CCF) tags for a Union catalogue. Initially the existing OPAC data of each IIT is converted in CCF and merged with similar information of others with location details and made available in each sister institution. The updation work of this union catalogue may be done on a monthly basis by transmitting list of additions of new books of each institute to others on floppy/by e-mail. One or two staff members of each institution can be trained for this task. A common software for library automation can be arrived at a later stage and can get rid of the simultaneous existence of OPAC and union catalogue by merging the two in this commonware.

Networked Collection Development

Each IIT has some unique departments like Agricultural Engineering or Architecture in Kharagpur or Textile Technology in Delhi whereas many departments are common. Apart from core books and journals essential for teaching activities, other books and journals should not be duplicated. The definition of valid user may be comfortably extended to cover valid users of all IITs and all subscriptions and acquisitions were subjected to the condition that information sources will be made available also to the sister institutions without embracing any violation of copyrights. In the case of information support for research, a committee of faculty could be constituted to assess the strengths and interests of each institute, and to arrive at core areas to be pursued by each institute. It is then binding on the library of that institute to acquire and service sources on that areas even for clients of other institutes. Provision may also be made for shared acquisition in case of more than one institute active in the same area. Every month a list of recommended books of each institute is communicated to other institutes and a committee of librarians will examine

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duplicates and identify the potential institute for purchasing each approved book. The institutes can share books on ILL by designating a common courier whereas few pages of journals/books demanded can even be faxed.

The subscription procedure of journals involves more planning due to the special nature of their publication and advance payment of huge subscription charges at hot foreign exchange. In the present context, even though we face a dearth of resources, surprisingly a lot of duplication takes place in journal subscriptions. This duplication rate should be reduced annually and zero rate may be achieved over an agreed period, taking into consideration the general procedure discussed earlier for books. CD-ROM subscription of different databases at different sites and their shared access over networks should be explored to counter the duplication of costly secondary sources. IIT at Kharagpur is seriously working on this area as part of an R&D project supported by ARDB.

Communication & Networking

The UNDP project for ERNET included the five IITs that then existed & IISc and were the pioneers in using computer networks for information communication in the country. The latest entrant in Gauhati also has access to similar services. Now all the institutes are using the services offered by ERNET like e-mail, ftp, telnet, etc, subject to the limitations of migration of more and more users on the same or little improved infrastructure. The augmentation of ERNET as per the initial plans is not progressing as expected. To effectively use services other than e-mail, we have to explore other options to support or bypass the feeble communication infrastructure. The institutes can think of separate VSATs for library in this context and IIT Kahragpur has already made a strong request for the same due to poor local communication infrastructure. Incidentally, the INFIBNET Centre of UGC has drawn up an ambitious action plan to provide VSATs to over 200 Universities.

Like other parts of the globe, Internet has made a tremendous impact on all walks of life in our country too. Though commercial and entertainment aspects over Internet are widely explored, it is also a goldmine of serious scientific and technical information, that can be kept track of only by weired individuals now. This situation can be changed by institutionalisation of such services. The IITs can do a lot more for servicing information sources in internet, by carefully cataloguing and classifying sites in a subject/discipline/mission level. Several publishers offer Internet subscription of their journals, which not only saves time but helps in easy manipulation of information. They can also support the environment cause by insisting on subscription of journals through web.

Services

Now the IITs have a host of information services apart from optimising use of the resources. The IIT Kharagpur is succesfully operating an electronic SDI for its faculty. Once the cooperation arrangement comes up, this service can be extended to faculties of other institutes. Similarly IIT Kanpur had discipline based current awareness services and there is no doubt in the utility of such services for sister institutes. Barring few operational constraints, it is comparatively easy to design common services once the collections and resources are acquired collaboratively.

What is Available Now?

At Central Library (CL), IIT, Kharagpur, through its OPAC, we can access information about 2 lakhs books, over 1 lakh bound volumes of 4000 unique journals, arrival details of 840 currently subscribed journals, over 2000 Ph. D theses etc. This information can be accessed also through our website http:/libweb.iitkgp.ernet.in or http://144.16.192.18. Services like Electronic SDI (E-SDI), List of Additions of Books & Journals is also available. To cater to research information needs, an Electronic Library (EL) is set up with computers for accessing Electronic Databases on CD-ROM and other media, like IEEE/IEE Full Text (1990-91), Ei Tech Index (1987 to date), INSPEC (1992-94), Biotech. Abstracts (1982-92), ABI/Inform (1989-93), CCOD-PCES (1991 to date), CCOD-ECT (1991 to date), CCOD-SBS (1991 to date), and CCOD-LS (1991). The EL also facilitates consultation of floppies and CD-ROMS that accompanies certain books. The Centre for Educational Technology (CET) of IIT, Kharagpur has videofilmed around 12 specialised courses spanning 430 hrs, and EL is the centralised access point in the campus for these materials. Similar resources and facilities exist at other IITs too. Before advocating for what is to be done through policy decisions or what can be done by getting all across the table, it will be optimistic to "think glob(nation)ally and act locally" about networked acquisitions for IITs, by fine-tuning these services and by putting the groundwork of collaboration by resorting to standardised procedures for all processes concerned with collection, oreganisation, and dissemination of information sources/& services.

Resource Sharing - 1955 Exercise at IIT Kharagpur

To assess the money saved out of resource sharing-arrangements, an exercise was done in IIT, Kharagpur during 1995. Table-I shows the Journal subscription details at IIT, Kharagpur with duplications at other IITs. In Table-2, those journals costing more than Rs. 30000 (in 1995, Exchange rate US$ ~ Rs. 34, UK£ ~ Rs. 50) with duplication at different IITs. A close observation of this data reveals that journals worth Rs. 17.71 lakh were duplicated in five IITs, Rs. 20.89 lakh were duplicated in four IITs, Rs. 21.38 lakhs were duplicated in three IITs, and Rs. 9.72 lakh were duplicated in two IITs. This amount will further increase if we take into consideration other journals costing less.

Table -1: Journal Subscription at IIT, KGP in Comparison with other IITs.

#	*Discipline*	*Budget (in lakhs of Rs.)*	*Title at KGP*[1]	*Titles available also at*			
				BOM	*DLH*	*KNP*	*MAS*
1	Aerospace Engineering	6.81	17	12	1	13	10
2	Agriculture & Food Engineering	11.67	112	9	9	7	3
3	Architecture & Regional Planning	1.91	36	8	3	6	4
4	Chemical Engineering	3.35	26	22	19	18	14
5	Chemistry	30.36	45	35	19	22	25
6	Civil Engineering	6.16	57	42	42	39	37
7	Computer Science & Engineering	5.43	40	23	17	24	12
8	Cryogenics	1.02	8	5	1	2	3
9	Electrical Engineering	4.64	64	26	23	25	14
10	Electronics & Commun. Engg.	10.03	151	108	100	106	57
11	Geology & Geophysics	7.75	44	22	4	6	0
12	Humanities & Social Sciences	2.71	69	24	24	36	9
13	Industrial Engg. & Management	8.29	75	24	29	20	15
14	Library & Information Science	0.35	11	7	3	7	4
15	Materials Science	4.81	19	11	6	7	4
16	Mathematics	17.09	73	44	25	41	24
17	Mechanical Engineering	10.51	97	67	49	51	47
18	Metallurgical Engineering	5.50	37	25	7	24	7
19	Mining Engineering	1.38	28	3	4	4	1
20	Ocean Engg. & Naval Architecture	0.99	27	0	3	0	5
21	Physics	13.51	41	31	19	15	20
22	Rubber Technology	1.98	10	0	0	0	0
23	Rural Development	0.27	11	3	3	4	0
24	Databases, Other Items etc.	8.32	14	10	2	8	7
	Total	164.83	1112	561	412	485	322

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[1] KGP-Indian Institute of Technology, Kharagpur; BOM-Indian Institute of Technology, Bombay; DLH-Indian Institute of Technology, Delhi; KNP-Indian Institute of Technology, Kanpur; MAS-Indian Institute of Technology, Madras.

A similar comparison of any other IIT's subscription data with the remaining IITs will lead to same or even more drastic duplication.

Table -2: Duplication Rates of Costly Journals among IITs

#	*Title of the Journal*	*Subsc. Price (in Rs. for 1995)*	*BOM*	*DLH*	*KGP*	*KNP*	*MAS*
1	Acta Metallurgica et Materialia	33393.88	*	*	*	*	*
2	Agr Ecosystems & Environment	34729.75		*	*		
3	Applied Physics Letters	41646.00	*	*	*	*	*
4	Artificial Intelligence	52979.52	*	*	*	*	
5	Automatica	36933.40	*	*	*	*	*
6	Bioorganic & Medicinal Chem Let	77410.41	*		*		
7	Chemical Abstracts	592351.25	*	*	*	*	*
8	Chemical Engineering Journal	38091.20	*	*	*		*
9	Chemical Engineering Science	67128.95	*	*	*	*	*
10	Chemical Physics Letters	190870.91	*		*	*	*
11	Comm. in Pure & Applied Maths	38522.55	*		*	*	
12	Composites Science & Technology	46965.31	*	*	*	*	*
13	Computational Mechanics	41332.03	*	*	*		*
14	Computers & Chem Engineering	30694.65	*	*	*	*	*
15	Computers and Fluids	31942.40			*	*	
16	Computers and Industrial Engg	32241.86			*	*	
17	Computers and Structures	89089.35	*		*		*
18	Contrib. to Mineralogy & Petrol	77887.23	*		*		
19	Coordination Chemistry Reviews	72172.80	*	*	*		
20	Corrosion Science	43172.15	*		*	*	
21	Earthquake Engg. & Struc. Dyna.	32338.75	*	*	*	*	*
22	Electric Power Systems Research	44105.60	*	*	*	*	
23	Electrical Engineering in Japan	50669.30	*		*	*	
24	European Jou. of Operation. Res.	89060.40	*	*	*		*
25	Geochim. et Cosmochumica Acta	33539.52	*		*	*	
26	Information and Computation	42340.10	*	*	*	*	
27	Information Processing Letters	33873.40	*	*	*	*	*
28	Inorganic Chemistry	39428.20	*	*	*	*	*
29	Inorganica Chimica Acta	130312.00	*		*	*	*
30	Int. J. for Num. and Anal. Meth.	33916.25	*	*	*	*	
31	Int. J. for Num. Meth. in Engg.	66255.00	*	*	*	*	*
32	Int. J. of Systems Science III	38080.85	*		*		
33	Int. Jou. of Heat & Mass Transfer	61638.85	*		*	*	
34	Int. Jou. of Machine Tools & Man.	35685.65	*	*	*	*	*
35	Int. Jou. of Multiphase Flow	31692.85	*	*	*	*	
36	Int. Jou. of Quantum Chemistry	102332.43	*		*		*
37	Int. Jou. of Rock Mech & Mini. Sc.	32691.05	*	*	*	*	
38	Int. Jour. of Energy Research	34547.25	*	*	*		*

39	Int. Jour. of Oper. & Prod. Man.	62337.59		*	*		
40	Int. Jour. of Production Research	37071.25	*		*	*	*
41	Intern. Journ. of Solids and Struc.	76112.75	*		*		*
42	International Journal of Control	44012.25	*	*	*	*	
43	International Journal of Fracture	62342.28	*		*	*	*
44	J of Wind Engg. & Ind Aerodyna	48754.86	*		*	*	
45	J. of the Chem. Soc-Faraday Tra.	43072.33	*	*	*		*
46	Jo. of the Chem. Soc-Perkin Tr. II	30644.74	*		*		*
47	Jou. of Applied Polymer Science	204664.84		*	*	*	
48	Jou. of Low Temperature Physics	36755.75	*		*		*
49	Jou. of Pol. Sc. Part A - Pol. Che.	76563.96	*	*	*		
50	Jou. of Pol. Sc. Part B - Pol. Phy.	76563.96	*	*	*		
51	Jou. of the Chem. Soc-Dalton Tr.	46416.30	*	*	*	*	*
52	Jou. of the Chem. Soc-Perkin Tr. I	38380.79	*		*		*
53	Jour. of Phys. & Chem. of Solids	60141.55	*		*		
54	Jour. of American Chem Society	53256.40	*	*	*	*	*
55	Jour. of Math. Analysis & Appl.	81746.05	*	*	*	*	*
56	Jour. of Physics A-Math. & Gen.	70423.01	*		*		*
57	Journal of Algebra	76887.35	*	*	*		
58	Journal of Biomechanics	34437.90		*	*		*
59	Journal of Catalysis	50506.05	*		*	*	*
60	Journal of Chemical Physics	94334.50	*		*	*	*
61	Journal of Elasticity	32655.48			*		*
62	Journal of Fluid Mechanics	34737.36	*	*	*	*	*
63	Journal of Functional Analysis	48587.00	*		*	*	
64	Journal of Hydrology	90202.20	*	*	*	*	
65	Journal of Meterials Proc. Tech.	61146.40	*	*	*	*	
66	Journal of Mathematical Physics	43696.75	*		*	*	
67	Journal of Organic Chemistry	34957.40	*	*	*	*	*
68	Journal of Physical Chemistry	56001.25	*	*	*	*	*
69	Journal of Physics B	57296.68	*		*		*
70	Journal of Physics Cond. Matter	114493.54	*		*	*	*
71	Journal of Physics D	32092.13	*		*		*
72	Journal of Physics G	38680.25	*		*		*
73	Journal of Solid State Chemistry	57042.40	*		*	*	*
74	Journal of Sound and Vibration	101748.75	*		*	*	*
75	Macromolecules	41393.60	*		*		
76	Materials Sc. & Engg. A	68413.80	*		*	*	
77	Materials Sc. & Engg. B	68413.80	*		*		
78	Materials Sc. & Engg. C	68413.80	*		*		
79	Mathematical Reviews	152985.95	*	*	*	*	
80	Mechanism and Machine Theory	32441.50	*	*	*	*	*

81	Numerical Heat Transfer A	30445.75	*		*	*	
82	Numerische Mathematik	39222.34	*	*	*	*	
83	Optics Communications	86205.90	*	*	*		
84	Parallel Computing	32351.00	*		*	*	
85	Pattern Recognition	36184.75	*	*	*	*	
86	Physica Status Solidi B	56665.92	*	*	*		
87	Physical Review A	39122.00	*	*	*	*	
88	Physical Review B	124149.25	*	*	*	*	
89	Physical Review C	31550.00	*		*	*	
90	Physical Review D	50953.25	*		*	*	
91	Physical Review Letters	54226.00	*	*	*	*	
92	Physics Letters A	95245.15	*	*	*		
93	Physics of Fluids B-Plasma Phys.	59314.00		*	*		
94	Polyhedron	76861.40	*		*	*	
95	Precambrian Research	45443.64	*		*		
96	Reliability Engg. & System Safety	50908.20		*	*		
97	Sedimentary Geology	48754.86	*		*		
98	Signal Processing	49953.75	*	*	*	*	
99	Solid State Communications	65132.55	*		*		*
100	Solid State Electronics	38181.15	*	*	*	*	
101	Synthetic Transactions	40352.45	*		*		
102	Talanta	37182.95		*	*		*
103	Tetrahedron	77410.41	*	*	*	*	*
104	Tetrahedron-Asymmetry	77410.41	*		*	*	*
105	Tetrahedron Letters	77410.41	*	*	*	*	*
106	Theoretica Chimica Acta	56196.38	*		*		*
107	Thin Solid Films	175921.20	*	*	*		
108	Trans. of the Amer. Math. Society	32496.50	*	*	*	*	*
109	Wear	101493.00	*		*		

A close observation of these two Tables gives an approximate estimate of the savings that could yield from a collaborative acquisition of costly information sources. The actual savings as of today will be more in the context of 5-15% increase in subscription rates and continuous downfall of the rupee in comparison to foreign currency, from the 1995 rates to the present rates of US$=Rs. 39.50 and UK£=Rs. 65. A rough calculation of the entire subscription data shows that 30% of the budget is spent on the costliest 50 journals, another 30% on the next 100 journals, and the remaining money for around 950 journals. In the case of expensive sources like Chemical Abstracts, one institution getting the CD-ROM version for access by others also on networks can be easily practised. If we admit the actual situation that only few articles out of a core journal are actually used, copyright paid photocopies from database vendors like ISI (TGA service) could be explored rather than subscribing them.

How to Proceed?

Only the groundwork needed for the development of collection on a shared basis in a network environment for IITs is discussed above and highlighted in annexure with some emphasis on the accrued benefits. The final shape of such a setup can be worked out only after active consultation with policy makers, faculty members and library professionals.

A paradigm change is taking place in the funding of these institutes and every time looking forward to the government for enhanced funds may not be treated favourably. Our motto should be to conserve each money spent for information work and resources by advocating for optimisation of use.

Though only the collaboration at the IIT level is stressed in this paper, the model can be explored for a fruitful information networking of all engineering and technical research and teaching institutions in the country and can provide some life blood to many such institutions which may give a boost to the development of efficient technocrats.

The technology is becoming more and more affordable and the improvement of communication is also happening. So the choice is definitely between whether to open up, share and perform or just to shut the doors and work in your cycle and be doomed. If we feel the need of the hour and arrive at a judicious decision, the future belongs to us.

Annexure

1. Committee Structure

Proposed Model for Resource Sharing/Collection Development/Combined Information Services/ Networking of IIT Libraries.

Top Policy Making Body:

One Director/Deputy Director of an IIT (on rotation)
All Chairmen, Library Committee
All Librarians
Few members of Library Committee/Faculty/ Library Professionals (on rotation)

Collection Development Group for Books:

One Chairman, Library Committee (on rotation)
Few Librarians
All Deputy Librarians (DL)/Assistant Librarian (AL)(s) (Acquisition)
Few Faculty & Library Professionals (on rotation)

Collection Development Group for Journals:

One Chairman, Library Committee (on rotation)
Few Librarians
All DL/AL (Journals)
Few Faculty & Library Professionals (on rotation)

Information Services Group:

One Chairman, Library Committee (on rotation)
Few Librarians
All DL/AL (Reference/Information Services)
Few Faculty & Library Professionals (on rotation)

Computer & Information Systems Group:

One Chairman, Library Committee (on rotation)
Few Librarians
All DL/AL (Information Systems) or All System Analysts
Few Faculty & Library Professionals (on rotation)

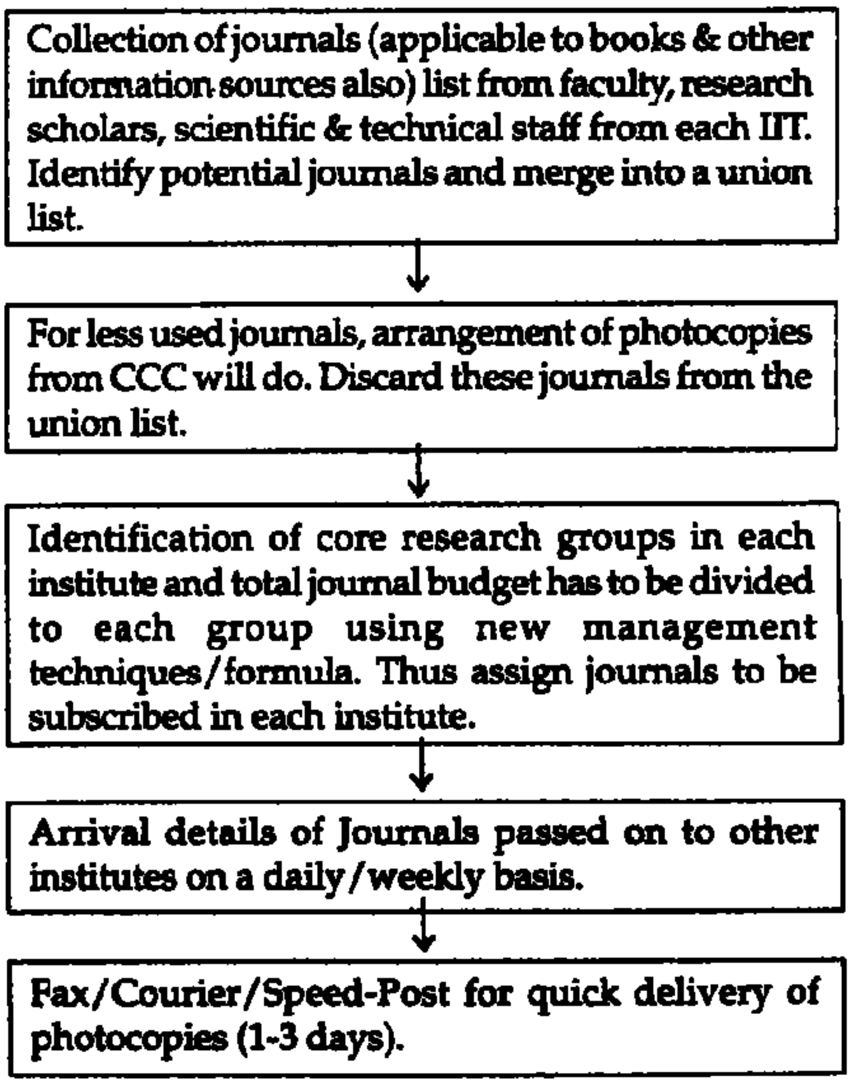
Union Catalogue Group :

One Chairman, Library Committee (on rotation)
Few Librarians
All DL/AL (Technical Processing)
Few Faculty & Library Professionals (on rotation)

Ombudsmen/Dispute Settlement Committee may also be formed at a later stage to clear the operational/other disputes between the participating institutions in a non-partisan manner.

A few representatives from students and other category of users can be co-opted in all groups. The various meetings should be held at different institutes without giving any bias/undue favour to any one participating institute. All the operational decisions shall be arrived at by resorting to minimum travel time and delay by utilising new communication tools like teleconferencing, e-mail etc.

2. Kharagpur Model for Resource Sharing



Collection of journals (applicable to books & other information sources also) list from faculty, research scholars, scientific & technical staff from each IIT. Identify potential journals and merge into a union list.

For less used journals, arrangement of photocopies from CCC will do. Discard these journals from the union list.

Identification of core research groups in each institute and total journal budget has to be divided to each group using new management techniques/formula. Thus assign journals to be subscribed in each institute.

Arrival details of Journals passed on to other institutes on a daily/weekly basis.

Fax/Courier/Speed-Post for quick delivery of photocopies (1-3 days).

Indian Students ing Abroad — 4

Annual Outflow Country-wise, Sex-wise & Subject-wise - 1994-95

S. No.	Country	Arts		Science		Education		Engineering		Arch & Designg		Tech & Industry		Medicine/ Pharmacy		Agri & Forestry		Law		Comm/ B.Admn		Bnk & Ins		Fine Arts		Lib. Science		Other Subjects		Total	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1.	Australia	2	1	50	7	—	1	81	1	2	—	25	17	29	2	1	1	—	—	236	12	—	—	3	—	—	—	74	3	503	45
2.	Austria	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	3	—
3.	Bangladesh	—	—	—	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
4.	Belgium	—	—	1	—	—	—	—	—	—	—	—	—		—	—	—	—	—	2	—	—	—	—	—	—	—	1	—	4	—
5.	Canada	3	—	9	3	—	—	9	1	—	—	—	—	2	—	—	—	—	—	14	—	—	—	—	—	—	—	4	3	41	7
6.	China	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	2	2	2
7.	France	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10	2	—	—	—	—	—	—	10	1	20	3
8.	Germany	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	6	1	10	1
9.	Hungary	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—
10.	Ireland	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
11.	Italy	—	—	—	—	—	—	—	—	—	—	—	1		—	—	—	—	—	3	—	—	—	—	—	—	—	1	—	4	1
12.	Japan	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	1	2	1	2
13.	Netherlands	—	—	1	—	—	—	—	—	—	—	—	—		—	—	—	—	—	2	—	—	—	—	—	—	—	3	1	6	1
14.	New Zealand	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	3	—	4	—
15.	Norway	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	1	—	4	—
16.	Phillippines	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	10	—	—	—	—	—	—	—	1	—	13	—
17.	Singapore	1	—	3	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	2	—	—	—	—	—	—	—	3	1	11	1
18.	Spain	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2
19.	Sri Lanka	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	4	—
20.	Sweden	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—
21.	Switzerland	4	1	7	1	—	—	8	—	2	—	—			1	—	—	1	—	15	1	—	—	—	—	—	—	32	4	70	9
22.	Thailand	—	—	1	—	—	—	—	—	—	—	—	—		—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	5	—
23.	UK	13	3	8	3	—	—	21	2	2	—	15	10	15	3	—	—	6	4	64	7	—	—	—	—	—	—	59	27	203	59
24.	USA	53	28	185	48	—	1	519	58	11	5	57	14	150	29	12	2	3	2	207	27	1	—	15	24	1	2	195	80	1409	320
25.	USSR (CIS)	—	—	8	1	—	—	59	1	—	—	1	—	69	15	—	—	—	—	5	4	—	—	—	—	—	—	2	1	144	22
26.	Others	1	—	2	—	—	—	8	—	—	—	—	—	4	—	—	—	—	—	14	2	—	—	—	—	—	—	10	1	39	3
	Total	78	33	277	63	—	2	707	63	17	5	98	43	277	50	13	3	12	6	591	55	2	—	18	24	1	2	414	129	2505	478

Source : Department of Education, Ministry of Human Resource Development, Government of India, 1998.

Seminar on Welfare of the Aged

The Department of Applied Research, Gandhigram Rural University, organised a three-day national seminar on 'Psycho-social characteristics, the problems and strategies for the aged in Rural India'. The purpose of the seminar was to discuss the developmental dimensions in relations to personality, memory, learning, creativity, intelligence etc along with other psysiological changes taking place during the old age. The needs and problems of old age were discussed with respect to socio-economic background, family relations, retirement, leisure time activities, loneliness and care, health and nutrition, generation gap, participation in socio-economic activities and cultural events etc. The strategies and support services such as self-care, family and welfare approach, provision of community services and institutional care, day care hospitals and rehabilitation centres, public utility services etc were examined with a view to formulating policies and programmes of action for the welfare of the aged in rural India.

There were ten technical sessions in which thematic presentations and discussions were held on significant aspects such as Agism and the aged, Psycho-social characteristics of the aged, Problems of the aged in India with special reference to rural aged, Status and gender issues of aging, Health and socio-demographic dimensions of Aging, Policy formulations and welfare measures for the aged and the Status of Research on Aging. As many as thirty seven papers were presented and discussed.

Professor Pankajam Sundaram, Vice-Chancellor, Mother Teresa University, who inaugurated the seminar, stated that "the myth that elderly population is a problem of the West and not of the East has exploded and the factors such as stress and strains of modernization, financial constraints, migration, inadequate housing, structural changes in family system have made the population of the elderly vulnerable". Dr. John Van Willigen, a Fulbright Scholar and Professor from the University of Kentucky, in his keynote address, dealt with his research work in aging for the first 20 years. According to Prof. Willigen "India's population is aging rapidly because of a progressive increase in life expectancy and decline in fertility". He referred to feminization of aging and said the situation of older men and older women was quite different largely because of cultural patterns associated with property inheritance and the gendered nature of the distribution of wealth. Older men in India were much better off than older women because they controlled wealth, had much better opportunities for study and employment when young and their mobility was less restricted compared to women.

Dr. N. Markandan, Vice-Chancellor of Gandhigram Rural University, in his special address, reiterated the need to ensure India's old age traditions for taking care of the elderly, keeping them as asset and pride of families. If at all the old age homes had to be set up, they should be ashram type amidst the educational institutions or other social organizations and never should be set up in isolation from the community, he added.

After detailed deliberations, the following recommendations were made at the seminar :

1. Provision of congenial psycho-social environment coupled with financial security should be the basic aim in all programmes targeted towards the welfare of the elderly.
2. A National Policy on the Aged should be formulated enlisting the problems of the aged in a long term perspective and highlighting the role of family, community and governmental and non-governmental organisations for the welfare of the aged.
3. There should be a social and income security scheme especially for the rural aged to meet their basic as well as socio-economic needs.
4. Cess should be levied and collected for the welfare programmes of the aged
5. Medical care, equipments and facilities should be provided to the senior citizens.
6. Provision for day-care-centres for the aged should be made.
7. Family counselling centres should be set up for the aged.
8. Home service should be given through NGOs or governmental agencies for the aged with special needs.

9. Old Citizens Clubs should be set up where the elderly could interact and share their experiences.
10. Members of the community especially the youth and children should be sensitized to have compassion and love towards elderly.
11. National Service Scheme (NSS) Volunteers and youth clubs should take up campaigns in the villages for creating awareness and taking care of the physical and psychological welfare of the aged.
12. Information relating to governmental programmes and policies for the welfare of the aged should be communicated through media and citizenship clubs.
13. Gerentology and psychosocial needs of the elderly should become part of the school and college curriculum.
14. There should be a provision to invite senior citizens to educational institutions to address the student community with their life experiences and to promote value education.
15. Mutual respect and understanding between the young and old be cultivated, if India's age old traditions of reverence to old and their wisdom is upheld.

National Academy of Legal Studies

The Andhra Pradesh Chief Minister Mr. N. Chandrababu Naidu said that Hyderabad was fast developing into a training and research destination point in the country. He was inaugurating the National Academy of Legal Studies and Research (NALSAR) in Hyderabad recently. He said that besides eminent training institutions like the ASCI, the NIRD, and the National Police Academy, the Indian Institute of Information Technology was coming up with the help of top IT companies.

The National Academy for Construction was being set up in collaboration with central government bodies.

A blueprint was being worked out to start a centre for excellence focusing on quality and productivity in industry. The Institute of Administration was being strengthened to provide quality training to officials.

Expressing concern over the unhealthy growth of bodies claiming to impart all kinds of education, particularly in the field of law, he said that the day's need was "higher and yet higher" standards of knowledge for the young citizens in order to equip them to cope with the complexities of the future.

A sound and competent justice delivery system depended on its inputs which included excellent legal education to provide the finest legal knowledge, he said. He hoped that the NALSAR would be one of the foremost institutions imparting legal education.

In his presidential address, Chief Justice of the Andhra Pradesh High Court, Justice Umesh Chandra Banerjee stressed that only proper education could eschew the path of hatred and violence so as to concentrate on the constructive plans of the nation.

He said that discipline and moderation in life could be achieved only through education which was compatible with the true development of the society. He thanked the State government for its decision to get an Ordinance passed to set up the Academy.

Educational Sciences : Exploring the Millenium

Visva-Bharati, Santiniketan, proposes to organise the First Indian Educational Science Congress on Dec. 28-30, 1998. The theme of the Congress is 'Educational Sciences : Exploring the Millenium.'

The objectives of the Congress are (1) To present the state-of-the-art education in the last century, in general, and in the last 50 years, in particular; (2) To deliberate on recent trends in educational studies and researches; (3) To identify areas and themes that can be prioritised for action in the next century; (4) To dwell on existing national inputs of thoughts and ideas facilitating the formulation of necessary policies and guidelines; and (5) To provide perspectives and work out strategies for realisation of above objectives.

The topics proposed to be deliberated include (a) Status of Education in the context of Heritage and Modernity; (b) Alternatives in Education : Evolution and Vision; (c) Emerging trends in Education; (d) Interdisciplinary approaches of Educational Sciences; (e) Revisiting celebrities of Educational Sciences; (f) Technology, Humanism and Education; (g) Values, Ethos, Spirituality vis-a-vis Educational Sciences; (h) Discipline-oriented Education; (i) Behaviourism and Pedagogy; (j) Teacher Education and appropriate pedagogies of Educational Systems; (k) Psycho-social dimensions in Educational Sciences; and (l) Economics of Education and Educo-Ecology.

Participation is open to all teachers, teacher educators, educationists, practitioners of education, educational activists, users and managers of education, education planners, researchers and scientists.

Further details may be had from Prof. D.P. Mukherjee or Prof. M. Chakraborty, Adhyapaka, Vinaya Bhavana, Visva-Bharati, Santiniketan-731 235.

Separate ETV Channel

The government is contemplating to set up of a separate educational television channel and evolving a national media policy. A working group had been constituted in the Department of Education in the Ministry of Human Resource and Development to recommend measures for operationalisation of educational satellite TV channel, Minister of Information and Broadcasting Mrs. Sushma Swaraj said in a written reply in Lok Sabha recently.

The Prasar Bharati had also set up a subcommittee for the purpose, she said adding further action would be taken on receipt of the reports.

Ms Swaraj said the national media policy was also being considered to integrate advances in various fields of media to bring a cohesiveness of purpose, keeping in view societal needs and cultural values.

A working paper on national media policy had been prepared by a subcommittee of the consultative committee of MPs attached to the ministry and was under consideration of the consultative committee for taking a view in this regard, the minister informed.

Folklore Studies in North-East

Leading folklorists, who met in Guwahati recently, said that though the folk studies and research in folklore were increasingly assuming an importance all over the country now a days, a growing tendency to underestimate the importance of this branch of knowledge was gripping the academic arena of the state.

Despite the fact the state had a rich cultural heritage with an enviable treasure of folklore, efforts to preserve the gems of the diverse cultural elements of the people were seemingly on the wane. And this was being witnessed at a time when the folklorists of the state were winning laurels both in the country and abroad, for their performance, regretted the folklorists.

According to Dr Birendra Nath Datta, noted folklorist as well as a musician who has carved a niche for himself in both fields of activities with his brilliant performances, there is an immense scope of research activities in folklore studies in the entire North-Wastern Region, which is sobriquetted as the 'folklorists' paradise' by the scholars because of its enviably huge treasure of both verbal and non-verbal folklore materials.

The Gauhati University (GU) is one of the pioneer institutions in matters of introducing folklore studies in the university curriculum. The GU has also made a laudable contribution towards promoting folklore research.

Dr. Nabin Chandra Sarma, former Head of the GU Folklore Research Department, said that seeds of folklore research were sown in the GU way back in 1955 when former Vice-Chancellor of the University late Dr. Birinchi Kumar Barua took the initiatives under a scheme for a folklore archive.

The University Grants Commission (UGC) and the state government later brought about change in the name of the Department to the Department of Tribal Culture and Folklore Research, Dr. Sarma apprised. Initially, some research scholars were also engaged on stipendary basis, to collect oral tales and songs from different parts of the state.

A considerable amount of work in the field was done by the Department although it had no independent status till 1972 and there was no full time teacher in the Department during the period.

Dr Sarma said that the performance of the Department had brought such a recognition for it that it could now boast of being an important centre of research activities in the field of folklore.

Foreign universities held our folklorists in such high esteem that even internationally acclaimed folklorists like Stuart Blackburn of the School of Oriental and African Studies, London University, said that North East India had done a commendable job in the field of folklore research.

Divulging the GU plans Dr Sarma said that preparations were afoot to introduce a PG level course in the University.

Dr Kishore Bhattacharjee, Lecturer of the GU Folklore Research Department emphasised setting up of independent folklore departments in the colleges of the state, for the purpose of popularising systematic studies in folklore.

Avinashilingam Instt. Plans Community College

The Avinashilingam Institute for Home Science & Higher Education for Women, a Deemed University, proposes to start a "community college" from the current academic year. The college woul specifically relate the curricula an syllabi to the manpower needs o the community, or to be specific to the local needs. This was revealed by Dr. Rajammal Devadas, Chancellor of the University in Coimbatore recently. The objective of starting such a community college was to give "affordable, applicable, acceptable and attainable" quality education intended to improve the community economically, socially and culturally.

Dr. Rajamal Devadas said that the unique concept of the U.S. in setting up community colleges had caught up with Canada and a few other countries.

In Chennai and Pondicherry also, such colleges had been started and the course contents of these colleges had been gone through by a group of academicians from the university.

COL Award for IGNOU VC

The Commonwealth of Learning (COL), Canada has conferred a Distinguished Service Award on Dr. Abdul W. Khan, Vice-Chancellor of Indira Gandhi National Open University (IGNOU) for his exceptional contributions to the work of the Commonwealth of Learning in pursuit of Excellence in Distance Education for the peoples of the Commonwealth.

Before joining IGNOU on 1st June '98, Dr. Khan was the Principal Communications Specialist at the COL from 1992 to 1998. In this capacity, he was responsible for the coordination and management of programmes concerning the application of communication and information technologies in open and distance learning throughout the commonwealth.

GU Plans Semester System for PG Courses

The Gauhati University (GU) proposes to introduce the semester system for all the postgraduate courses from the 1999 academic session. This was revealed by the Vice-Chancellor of the GU, Dr. Hiralal Duorah in Guwahati recently. He also said that correspondence courses for private PG students of the Arts stream were being introduced shortly to do away with the existing system for the private students and to streamline the academic activities of the University.

Besides, the GU Library was also linked with all other university libraries of the country through the Information and Library Network of the UGC, he said.

Dr. Duorah also revealed that the faculties of the University had been entrusted with the task to hold the respective PG examinations themselves.

Telugu Varsity Plans New Courses

The Potti Sriramulu Telugu University proposes to start new courses with emphasis on exploring the nuances of fine arts from the academic year 1998-99.

According to the Vice Chancellor of the university Prof Nayani Krishnakumari the new courses would include a diploma course in *Yakshagana* at the Sri Sidhendra *Kala Kshetram* in the Krishna district and a doctoral study in *Janapada Vignanam* at the Warangal *pranganam*.

Other new courses would include diploma in mimicry, *yakshaganam* and *jyotirvasthu* at Hyderabad apart from doctoral programmes in folk arts and music, she said.

A correspondence course in astrology would also be started by the Telugu University, she said, adding that these new courses were in consonance with the courses presently being offered by other universities in the State.

West Bengal Plans Techno Varsity

The West Bengal government is considering a proposal to set up a separate university to monitor the teaching of technology-related courses. This is reportedly based on the recommendations of the eight-member panel set up by the government last year.

The committee, headed by former director of Shibpur Bengal Engineering Colleges Dr. Bimal Sen, was formed to examine ways to upgrade technological education in the state and improve the condition of the existing four state-run technological institutes. The committee felt the need for a separate university for better quality control of the courses taught at these institutes.

At present the institutes are affiliated to the Calcutta University which is burdened with over 600 courses in various disciplines. The university is, therefore, unable to properly monitor the standards of the technology faculties.

"The government is seriously considering the recommendations and measures are being taken to complete the schemes to modernise technological education in the state within the Ninth Plan", State Higher Education Minister Satyasadhan Chakraborty said.

The other recommendations of the committee include increasing the student intake capacity of the existing institutes.

It also urged introduction of courses in associated disciplines, and framing of a syllabus according to the needs of the related industries.

News from Agricultural Universities

Revamping Agricultural Education

Around 200 agricultural colleges, 28 state agricultural universities and four ICAR research stations would soon be linked by computers through a network, said Dr. S.L. Mehta, Deputy Director General (Education), Indian Council for Agricultural Research (ICAR). He said that realising the importance of access to information from all quarters and tuning the students and researchers to the latest in the field, the networking, undertaken for Rs. 1.25 crores, would be completed by the year-end. Internet and E-mail facilities would be provided by August 14.

He said that in a bid to match the food requirements of the next millennium and doubling the food production from the present 198 million tonnes, all aspects of agriculture studies were undergoing a thorough change, starting from the syllabus to the infrastructure.

A one-time grant of Rs. 400 crores had been sanctioned for infrastructure development, of which Rs. 250 crores would be used for upgrading the agricultural colleges in the States while Rs. 150 crores would be spent on the ICAR institutions.

Various programmes had also been initiated to upgrade and improve the quality of the faculty.

The Agricultural Human Resources Development Project introduced in 1995 with a World Bank sanction of Rs. 247 crores in Tamil Nadu, Andhra Pradesh and Haryana would soon be extended to other States.

The pilot project in the three states, which concludes by 2000, would train 700 scientists abroad on skills in areas which the country required the most. It had now been decided to extend this facility to all the states in the second phase of the project, he said.

To implement total reforms in all the colleges and universities, in tune with the rapid changes taking place, he said accreditation procedures at the national level had been introduced and admissions were based on an entrance test at the All India level.

A National Talent Scholarship had also been introduced for persons getting admissions through the All India Test, basically to reduce inbreeding. Junior Research Fellowship scholarship had also been introduced and based on the number of students acquiring it, the grant to the colleges would also be substantially increased.

To improve the teaching competence of the faculty, five members from each college would be eligible for an award of Rs. 10,000 each. The selection for the award would be made by the students and a committee.

The teachers could compete at the national level where the offer would be Rs. 30,000 a winner. It had also been made mandatory from 1998-99 that all first level appointments starting from Assistant Professors would be based on their grades at the National Eligibility Test (NET). The colleges which failed to abide by this regulation would lose the support of the ICAR, Dr. Mehta said.

The present internal examination system had been scrapped and hereafter it would be 50 per cent internal and 50 per cent external from 1998-1999.

All these aspects aimed at improving the quality of the students passing out of the colleges, he said.

Another World Bank scheme is in operation wherein the faculty members working in a particular college for seven years could avail a one year paid leave during which time they could work in any college or take up research.

The Council was also keen that the colleges developed their own resources by coming out with some viable technology on their own. Enough grants would be provided for this purpose and the sale proceeds from it could be enjoyed by the college with only 20 per cent of the grant to be repaid after five years.

The cost of education was dramatically less in India compared to universities abroad, Dr. Mehta said.

About 100 students would be admitted to the various colleges from South Africa and other countries every year.

To satiate the excessive demand, colleges were being provided with funds to construct additional hostels, he said.

News from UGC

Countrywide Classroom Programme

Between 22nd and 31st July, 1998 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 7.15 to 8.00 a.m. every day except on Saturdays & Sundays.

These programmes are also telecast on Doordarshan's National Network from 6.00 to 7.00 a.m. four days a week i.e. on Tuesdays, Thursdays, Saturdays and Sundays. On DD2 University Video Lecture Courses will be shown at midnight between 0000-0030 hrs. and in the morning between 10 to 10.30 a.m. on Monday through Friday.

Hindi Programmes are being telecast on Mondays, Wednesdays & Fridays from 6.00 to 6.30 a.m

22.7.98
"Regulation of Gene Expression"
"Hidden in the Mist"
"Nutritional Blindness"
UVLC
"Household Storage"
"Modes of Representing Relief-1"

23.7.98
"Question Time-71"
"Contact Lenses
UVLC
"Ethnic Diversity Language, Religion & Culture"
"Consumption Function"

24.7.98
"River Journal-2 : The Portuguese in Hoogly"
"Retinitis Pigmentosa — A Dreaded Eye Disease"
UVLC
"Humanistic Perspective on personality"
"Correlation and Regression"

25.7.98
"History Writes Itself"
"Aesthetic Process in literature & Music-1"
UVLC
No Telecast

26.7.98
"Finding Oneself with Sue Weston-1"
"Raagsangeet-1"
UVLC
No Telecast

27.7.98
"Fibonacci Numbers-2"
"You & Your Blood Pressure"
UVLC
"School of Sculpture — South India"
"Carbohydrates-2"

28.7.98
"Vasundhara-4 Captive Breeding"
"A Shelter"
"Knowing by Heart-1"
UVLC
"Status of Women"
"Function of Several Variables-2"

29.7.98
"Gene Transcription"
"Knowing by Heart-2"
UVLC
"Waste A Resource"
"Modes of Representing Relief-2"

30.7.98
"Question Time-72"
"Knowing by Heart-3"
UVLC
"Challenges & Problems : Poverty, Population, Development & Economic Challenges"
"Consumption Function and the Multiplier"

31.7.98
"River Journal-3 : The Dutch in Chinsura"
"Paper Boats in Turbulent Streams"
"Knowing by Heart-4"
UVLC
"Interactional & Cognitive Perspective"
"Time Series"

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

22.7.98
"बाबा रामदेव : एक युग पुरुष"

23.7.98
"लोकधाम : रामदेवरा"

24.7.98
"अंधेरे से उजाले की ओर"

27.7.98
"होम्योपैथी"

28.7.98
"अनीता की कहानी-1"
"केवल 45 मिनट"

29.7.98
"अनीता की कहानी-2"
"ऑवला"

30.7.98
"डायबैटिक रैटिनोपैथी"

31.7.98
"संवेदना एक संजीवनी"

Guidelines for Area Studies Programme

The University Grants Commission (UGC) is reported to have outlined its guidelines for strengthening the Area Studies Programme (ASP) in its Ninth Plan. ASP will focus on environmental issues, ethnic conflicts and select segments of science and technology.

The ASP relates to multi-disciplinary study of countries and regions outside India. The focus is on sociological, political, economic and cultural developments.

The programme will take into account the rapid pace of development, changing social structures including family, caste and community and the emergence of new problems.

The area study centres, to be established by universities, will do in-depth study of Indian relations with a country or a region. This will not only enhance our understanding of a region but the centre can also provide inputs to the Government on policy matters.

The UGC had started these

centres to promote studies of those countries with which India had a significant relationship. These centres, supported on a selected basis, are located in universities which have other supporting programmes relating to study of foreign countries.

The ASP will be for the Masters and M Phill and PhD degrees.

The courses will lay stress on research as well as encompass disciplines such as Diplomacy, Economics, History, Politics, Sociology, Language and Literature.

In the Ninth Plan period, the UGC will provide the following assistance on 100 per cent basis to the area study centres.

Under the non-recurring assistance a university will get Rs. 10 lakhs per year for office equipment, books, field work and operational work.

Under the recurring head, an area study centre will get Rs. 40 lakh in the plan period for expenses on staff.

The centre will also get Rs. five lakhs for five years for conducting seminars and scholarships. For diplomats as ambassadors in residence the UGC will provide Rs. 50,000 per year per diplomat.

The salary and allowances in residence will be borne by the Ministry of External Affairs.

Some measures for strengthening the ASP as suggested by the UGC include a real working knowledge of at least one of the non-Indian languages of the area being studied. Training may be provided in relevant languages through orientation courses or providing facilties either in India or abroad.

The area studies centres will interact with the Ministry of External Affairs and other relevant Ministries in the Central Government.

Canadian Studies

The Canadian Studies Programme at the Delhi University has been conferred the status of an Area Studies Unit by the UGC. According to Registrar Dr KK Panda, "with this elevation in its set up, the Centre can continue its activities more meaningfully and in collaboration with the Ministries of Government of India and External Affairs."

The centre was started in 1992 and has taken a holistic view of Canadian Studies and has gone on to tackle issues like environment, women's studies and intellectual property rights.

News from Abroad

TWAS Grants for Scientific Meetings

The Third World Academy of Sciences (TWAS) with generous funds from the Italian Government (through the Direzione Generale per la Cooperazione allo Sviluppo) encourages the organization of high level international and regional scientific activities in developing countries by offering financial assistance to the organizers of conferences, workshops, symposia and special meetings held in these countries.

The support is normally provided in the form of travel grants for principal speakers from abroad and/or participants from developing countries other than the country where the meeting is held. The amount provided normally does not exceed US$ 3,000.00.

The Academy only considers applications made by organizers of international and regional scientific meetings in Developing Countries.

Special consideration will be given to those meetings which are likely to benefit the scientific community in developing countries and to promote regional and international cooperation in developing science and its application to the problems of the Third World.

Organizers of international and regional conferences to be held in developing countries may apply for grants to assist with travelling expenses of principal speakers who are unable to obtain sufficient funds from other sources and/or young participants from the region.

Grants are offered for meetings in the fields of Natural Sciences : Agricultural, Biological, Chemical, Engineering, Geological and Medical Sciences.

Grants are not offered for meetings in Physics and Mathematics which are covered under a similar programme sponsored by the Abdus Salam International Centre for Theoretical Physics (ICTP).

The closing dates for receipt of completed requests are : 1st June for meetings to the held during January-June of the following year; and 1st December for meetings to be held during July-December of the following years.

Further details may be had from M.T. Mahdavi (Mrs), Third World Academy of Sciences (TWAS), c/o The Abdus Salam International Centre for Theoretical Physics (ICTP), P.O. Box 586 - Via Beirut 6 - 34100 Trieste - Italy.

BOOK REVIEW

Impressionistic

A.P. Barnabas*

K.G. Gurumurthy. Cross Cultural Research and Other Anthropological Essays. New Delhi, Reliance Publishing House, 1996. Pp. 151. Rs. 175/-.

The chapters in the book are a collection of disparate articles. The topics dealt with in the book are very varied — problems of Cross Cultural Research, Cultural Transplantation, Peasants and their Problems, Tribal Health and Hygiene, Status of women under Devadasi system. Most of the topics discussed do not provide the insights expected from anthropological analyses. At times the chapter headings are rather misleading. While dealing with the problems of cultural research, the discussion is more on the characteristics of Fillipino rural people, rather than on specific problems of cross cultural research. As for cultural transplantation, the manner of Tibetans' adjustment to Indian conditions is dealt with only in the last page. The rest of the chapter is an analysis of Tibetan social structure as it prevails in Tibet.

The topics in the other chapers are 1) Plight and exploitation of under privileged communities, 2) Aged and their problems, 3) Changing status of the authority of the aged, and 4) Changing Profiles of caste in Karnataka.

In the chapter on Aged and their Problems, all that is indicated is that old age has emerged as a social problem and the welfare measures are inadequate. The changing profiles of caste in Karnataka is based on empirical study of a village. The changes referred to are agricultural practices, occupations and leadership. The author states that secular education, employment outside traditional areas, democracy and universal franchise brought further change. These however are not clearly indicated. A qualitative analysis of changes e.g. in land ownership, occupational changes, migration, educational attainments, could have allowed for more specific conclusions as on changing caste relations. The chapter on 'Development' — one of the more substantial, discusses the history and traditional practices and roles of devadasis. The impact of political changes on the system is referred to. The degeneration of the devadasis into commercial activities and the causes of the same have been indicated.

As there is no running theme, each chapter can be read by itself. While anthropological insights are discernible to some extent in a few chapters, the overall impression one gets is that the conclusions drawn are very general and based on impressions. The topics dealt with are of contemporary concern, but a deeper analysis is necessary.

Former Professor of Sociology and Social Administration, Indian Institute of Public Administration, 27 Pocket A-4, Kalkaji Extn., New Delhi-110 019.

चौ0 चरण सिंह विश्वविद्यालय
मेरठ

आवश्यकता है

विश्वविद्यालय पुस्तकालय में पुस्तकालयाध्यक्ष पद पर नियुक्ति हेतु आवेदन पत्र आमन्त्रित किये जाते हैं। इच्छुक एव अर्ह अभ्यर्थी अपनी शैक्षणिक योग्यता, अनुभव एवं वांछित विवरण का उल्लेख करते हुए टाइप्ड अथवा अपने हस्तलेख में वित्त नियंत्रक के नाम रू0 100/— के बैंक ड्राफ्ट (नॉन रिफन्डेबल) सहित अपना आवेदन पत्र प्रमाण पत्रों की प्रति सहित, कुलसचिव, चौ0 चरण सिंह विश्वविद्यालय, मेरठ को 14 अगस्त, 1998 तक प्रेषित कर सकते हैं। वेतनमान एवं वांछित अर्हतायें निम्नवत हैं :—

पुस्तकालयाध्यक्ष (एक पद) वेतनमान रू0 4500—7300/—

1. पुस्तकालय विज्ञान/सूचना विज्ञान/अभिलेखीकरण में स्नातकोत्तर उपाधि कम से कम 55 प्रतिशत प्राप्तांकों सहित अथवा समकक्ष श्रेणी और अविछिन्न उत्तम शैक्षिक उपलब्धियां।
2. सूचना प्रौद्योगिकी/अभिलेखागार एवं पांडुलिपि अनुरक्षण में एक वर्ष का विशिष्टीकरण अथवा संस्था के विशिष्टीकरण क्षेत्र में स्नातकोत्तर उपाधि।
3. किसी विश्वविद्यालय पुस्तकालय में कम से कम 10 वर्ष का उपपुस्तकालयाध्यक्ष के रूप में अनुभव अथवा 15 वर्ष का महाविद्यालय पुस्तकालयाध्यक्ष के रूप में अनुभव।
4. पुस्तकालय सेवा एवं संगठन के अभिनवीकरण तथा प्रकाशित कार्य का साक्ष्य।

वांछनीय पुस्तकालय विज्ञान/सूचना विज्ञान/अभिलेखीकरण/अभिलेखागार एवं पांडुलिपि अनुरक्षण में एम0 फिल0/पी0 एच0 डी0 उपाधि।

पुस्तकालय का कम्प्यूटरीकरण निकट भविष्य में सम्भावित है, अतः कम्प्यूटर कार्य प्रणाली का समुचित ज्ञान एवं अनुभवी अभ्यर्थी को प्राथमिकता दी जायेगी।

कुलसचिव

COMMUNICATION

Education for All

The World Conference on Education For All (EFA) held in Jometien, Thailand in 1990, recognised that a policy of more of the same would not be sufficient to achieve the goal of Education for All. Educational systems in most countries clearly need an injection of fresh ideas, a broader vision of how the basic learning needs of all might be met and the courage to turn this vision into practice. To disseminate and promote examples of educational change — both in the realm of formal and non-formal education — through which the principles of Jometien would come to life include programmes which focus on actual learning acquisition, rather than mere participation or certification, programmes which aim to provide a solid foundation for life, programmes responsive to the learning needs and conditions of the socio-cultural environment, programmes that are devised to fit the means, needs and aspirations of the community.

By the year 2040, the population of the Asia-Pacific region which includes India is expected to have doubled to an astonishing 3.3 billion people. This region is already home to 63% of the world's population, with five countries alone accounting for 46 per cent of the world's population — China, India, Indonesia, Pakistan and Bangladesh. The world has never seen such growth in so short a time. By 2040 AD requirements for food will have doubled and the need for water and sanitation quadrupled. The consumption of energy and manufactured goods will increase five-fold, while pollution may increase upto ten-fold.

In India, in spite of its 50 years of Independence, widespread poverty still persists and the great divide between haves and the have-nots continues to widen. The incidence of poverty is as high as 80% in some less favoured areas in India and the percentage is increasing with widespread unemployment, no wage-jobs and increasing population. The environmental impact of the booming population is exacerbated by the growing inequity between the rich and the poor. The rich have a life style that demands large amounts of energy, raw materials and manufactured goods. The poor are deprived of basic resources and forced to make unsustainable use of the natural resources for their survival.

With the serious environmental changes affecting the entire planet, including its atmosphere, climate, oceans, biodiversity, etc, there is a need to emphasise the concept of sustainable development, of which education is an essential component. Education is the single most powerful factor in moderating population growth and reducing poverty. In India EFA will forge active citizenship — cultivating democratic attitudes and respect for human rights, tolerance and non-violence; promotion of a vision of employment and work within the broader concept of 'active life'; and other values of a 'caring society'.

The dawn of a new millennium is round the corner and it is time to assess what adjustments need to be made in promoting EFA for a dynamic yet also uncertain future, that is characterized by a rapid high technology change and widespread questioning of the existing socio-economic patterns. Aung San Suu Kyi, the winner of the Nobel Peace Prize, once said, "the true development of human beings involves much more than mere economic growth. At its heart there must be a sense of empowerment and inner fulfilment."

With a special priority given to girls and women, in India, EFA has started making a mark on literacy, though extreme poverty and high dropout rates are two major obstacles to achieving basic education for all by the year 2000 AD.

India's association with various programmes encompasses the APPEAL (Asia Pacific Programme of EFA) which work towards eradicating illiteracy and universalizing primary education, the APEID (Asia-Pacific Programme of Educational Innovation for Development) which encourages educational development to achieve national development goals, the ACEID (Asia-Pacific Centre of Educational Innovation for Development) which is an information clearing-house on education, the APNIEVE (Asia-Pacific Network for International Education and Value Education) which aims to promote and develop value-education for peace and sustainable development, the ASP (Associated Schools Project) which works to construct the defences of peace in the minds of people, and the UNEVOC (Unesco International Network on Technical and Vocational Education) which aims to create more effective relationships between various agencies, regional organisations, NGOs, public and private funding sectors and industry and the private business community.

The EFA is a passport to life from basic education to university. Universities can effectively contribute to the process of diversifying literacy programmes. Universities, centres of higher learning and other scientific establishments can make an impact with their infrastructure, high level knowledge and skills on India's adult literacy programme.

Education for All is not a miracle cure or a magic formula to open the door to a world in which all ideals can be attained. However, it is one of the principal means available to foster a deeper and more harmonious form of human development and thereby to reduce poverty, ignorance, tension, oppression and war.

'Learning to be', 'Learning to know', 'Learning to do' and 'Learning to live together' are four pillars of the EFA concept. It is an utopia but we all have to move towards it.

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National Councils & Educational Administration

Very important issue seems to have been raised by Dr. M.L. Ranga, Vice-Chancellor, Kurukshetra University, (*University News* 36(16), 20 April 1998, p. 18) regarding the lack of coordination among various agencies like UGC, NCTE and AICTE. UGC and Councils of all sorts operate in a conditioned environment. Universities operate and oversee the actions at the grassroots and thus face the rough and tumble of the realities. Incongruencies, contradictions, hen-egg-first situations, lack of academic thrust/focus as emanating from 'Councils are to be resolved and at times reconciled by the universities and at the same time they are expected to be accountable to ensure conformity with the stipulations of National Councils.

It is high time councils realise that they restrict their role at macro-level in defining standards, norms and needs; nuts & bolts as well as monitoring, such micro-level issues be left to the universities which are also autonomous statutory bodies. It is the cardinal principle of effective autonomy that autonomy of a system should percolate to different levels in which each subsequent level is accountable for that sphere of autonomy.

There are wide variations in perceptions, procedure and practice of different councils. One council puts a premium on the fact that teachers should be encouraged and permitted to take up consultancy work so that live field experiences are brought up as inputs in teaching; another council totally debars full-time teachers in indulging in field-practice, although the curricula structure heavily provides for involvement of professionals. Are universities expected to seek conformity with such two diametrically opposite stipulations?

Element of flexibility, the necessary ingredient in policy stipulation, needs to be brought in, particularly with the diversity of educational set-ups in the country; education being the concurrent subject and large number of colleges being grant-in-aid colleges are tied down by certain restrictions of the state governments also. For example, NCTE prescribes strictly 1:10 teacher to student ratio in teachers training colleges (B.Ed.). State of Gujarat has prescribed the ratio 1:12 and sanctions grants accordingly. While a university would not involve itself in intractable debate of academically judicious ratio, it will at least expect NCTE to wait for sometime for the state govt. to reconsider its norm. In the meanwhile, students should not be made to suffer in terms of available seats, nor colleges be made to suffer slashing of grants. There are many such examples.

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WANTED

Applications are invited for the appointment in the post of Lecturer in Statistics under UGC Scheme (Leave vacancy — Open Merit-1)

Age and qualifications are as per Government, University and UGC rules and regulations.

Applications, in the prescribed form can be had from the college office on payment of Rs 200/- (Rs 210/- by post) should reach the undersigned within 30 days of this notification.

MANAGER

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

SOCIAL SCIENCES

Commerce

1. Bandgar, Patalu K. **A study of middle class investors preference for financial instruments in Greater Bombay.** (Dr H N Agrawal), Department of Commerce, Saurashtra University, Rajkot.

2. Gupta, Abha. **Financial management in public sector : A case study of Bharat Heavy Electrical Limited, Haridwar.** (Dr A K Das), Department of Commerce, Hemwati Nandan Bahuguna Garhwal University, Srinagar.

3. Hari Om. **Half-yearly financial results and behaviour of share prices in India.** Department of Commerce, University of Delhi, Delhi.

4 Nirmala, K. **A comparative study of corporate banking services rendered by scheduled commercial banks and foreign banks.** (Dr B C Sanjeevaiah), Department of Commerce, Bangalore University, Bangalore.

5. Nutan Kumar. **Motivation of university teachers : A comparative study of India and Pakistan.** (Prof N S Gupta), Department of Commerce, University of Jammu, Jammu.

6. Sahoo, Dusmanta **An evaluation of the impact of policy and institutional measures on industrial development with special reference to Orissa.** Department of Commerce, Utkal University, Bhubaneswar.

Economics

1. Ahmed, Syed Thanvir. **Capital budget of a state Government in a federation : An integrated approach.** (Dr R G Desai), Department of Economics, Bangalore University, Bangalore.

2. Anuradha, A. **An analysis of interstate industrial development in India, 1970-71 to 1992-93.** (Dr A V V S K Rao and Prof R K Mishra), Department of Economics, Osmania University, Hyderabad.

3. Bagalkoti, Siddappa Tippanna. **An economic analysis of agro-processing industries in India : An inter-state and inter industry study.** (Dr R V Dadibhavi), Department of Economics, Karnatak University, Dharwad.

4. Belavatagi, Mahantayya Basayya. **Economic analysis of agro-based industries in Karnataka.** (Dr R V Dadibhavi), Department of Economics, Karnatak University, Dharwad.

5. Chatterjee, Anup Kumar. **The behaviour of monetary sector in India, 1970-89.** Department of Business Economics, University of Delhi, Delhi.

6. Damodar Reddy, N. **Impact of HYV on agricultural growth in Mahaboobnagar District.** (Prof J S Narayan Rao), Department of Economics, Osmania University, Hyderabad.

7. Das, Tushar Kanti. **Nature and impact of federal transfers on Indian states, 1960-61 to 1990-91.** (Dr P K Tripathy), Department of Economics, Sambalpur University, Jyoti Vihar, Burla.

8. Dhillon, Bhupinder Kaur. **Evaluation of selected specialised training courses organised by Punjab Agricultural University, Ludhiana.** Department of Extension Education, Punjab Agricultural University, Ludhiana.

9. Giri, Arun Kumar. **Demand for money in India : New issues and evidences.** (Dr B Kamaiah), Department of Economics, University of Hyderabad, Hyderabad.

10. Mathur, Vijaykumar **Demographic study of tribal population of Western Madhya Pradesh, 1971-81 : A census analysis.** (Dr V D Nagar), Department of Economics, Devi Ahilya Vishwavidyalaya, Indore

11. Nagarjuna, Boppana. **Privatization and liberalisation for industrial development in India and other developing countries.** (Prof V V N Somayajulu), Department of Economics, University of Hyderabad, Hyderabad.

12. Rajan, Asha C. **Institutional finance and the development of semi-arid areas : A case study in Karnataka.** (Dr D T Nanje Gowda), Department of Economics, Bangalore University, Bangalore

13. Sharma, Bal Krishan. **Economic aspects of child labour in Punjab : A case study of Patiala District.** (Dr Vishwa Mittar), Department of Economics, Punjabi University, Patiala.

14. Shashidhar Reddy, Chinthalapani. **A study of various factors causing technological gap in adoption of rabi jowar.** (Dr R R Kulkarni), Department of Agricultural Extension, Marathwada Agricultural University, Parbhani.

15. Suman. **Changing pattern of state finances : A comparative study of Punjab and Haryana.** (Dr Janak Raj Gupta), Department of Economics, Punjabi University, Patiala

16. Suresh Kumar. **Common property resources in rural Haryana : A regional analysis.** (Prof M H Qureshi), Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi.

17. Thomas, Philip. **Dynamics of co-operative marketing in tribal economics : A study of non-timber forest produce marketing in Kerala.** (Dr M Meera Bai), Department of Economics, Cochin University of Science and Technology, Kochi.

18. Uma Rani, A. **Agrarian relations and rural credit market.** (Prof D Narasimha Reddy), Department of Economics, University of Hyderabad, Hyderabad.

19. Veerachamy, R. **Money supply, income and balance of payments : The Indian case study.** (Prof S N Nanje Gowda), Department of Economics, Bangalore University, Bangalore.

Education

1. Agarwalla, Sunita. **A study of the educational impact of television on the social and moral development of the women in the Greater Guwahati area.** (Dr Parbin R Akhtar), Department of Education, Gauhati University, Guwahati.

2. Behera, Amarendra Prasad. **The effect of Radio Intervention Programme on the language and cognitive development of pre-school children.** Department of Education, Kurukshetra University, Kurukshetra.

3. Das Barbora, Rupa. **The impact of socio economic status on the academic achievements of the first generation learners**

FGLs. (Dr Nandita Sarma), Department of Education, Gauhati University, Guwahati.

4. Dhillon, Satwinder. **A study to find out the contribution of different types of school towards various educational courses in India with special reference to Engineering, Army and Medical professions.** (Dr J L Verma), Department of Education, Bundelkhand University, Jhansi.

5. Dhilon, Tejinder Singh. **Martial and leisure-time activities during Mughal period, 1526-1707.** Department of Physical Education, Kurukshetra University, Kurukshetra.

6. Gupta, Shailaja. **A study of personality traits, academic achievement, interests and aspirations of high creative and low creative physically handicapped.** (Dr R N Manav), Department of Education, Bundelkhand University, Jhansi.

7. Jasraj Kaur. **TV viewing behaviour of illiterate and neoliterate adults of Punjab and their perceptions about the impact of TV programmes on their socio-cultural life.** (Dr Amrit Kaur), Department of Education, Punjabi University, Patiala.

8. Jaya Sree, Kandi. **Socialization ability, scientific attitude, and science attitude in junior college students : A study.** (Dr M Syama Sundara Rao), Department of Education, Nagarjuna University, Nagarjunanagar.

9. Kanwaljeet Kaur. **A comparative study of the characteristics of rural adult drop-outs and persisters.** (Dr T S Sodhi), Department of Education, Punjabi University, Patiala.

10. Luthra, Kiran. **A study of population education awareness of teachers working at primary and secondary levels of education of Jammu Province.** (Dr Ghulam Rasool), Department of Education, University of Jammu, Jammu.

11 Ram Babu, P. **Sustenance of slum improvement programme in Visakhapatnam, Andhra Pradesh.** (Dr B S Vasudeva Rao), Department of Adult and Continuing Education, Andhra University, Waltair.

12. Ranga Rao, Ravi. **Madhyamika Dasa Vidyardulalo mini kavitha rachana nypunyalu.** (Dr M J V Gurunadham), Department of Education, Nagarjuna University, Nagarjunanagar.

13. Saileela, K. **Realisation of educational, social, moral, cultural and spiritual values in ancient Telugu Satakas : A study.** (Dr T J Rajendra Prasad), Department of Education, Nagarjuna University, Nagarjunanagar.

14. Saxena, Sadhna. **A study of formal and non-formal education programme.** Department of Education, University of Delhi, Delhi.

15. Sidhu, Jasleen. **A comparative study of the characteristics of best liked teachers as perceived by the 6th grade students in India and Canada as a function of their own intelligence and personality.** (Dr Amrit Kaur), Department of Education, Punjabi University, Patiala.

16. Soni, Ram Bhajan Lal. **Effectiveness of autotelic approach for Education of visualy impaired children.** Department of Education, University of Delhi, Delhi.

17. Vanaja, M. **A study of the enquiry training model in Science teacher education programme.** (Dr T J Rajendra Prasad), Department of Education, Nagarjuna University, Nagarjunanagar.

18. Yashoda, G. **A study of the perception of parents and teachers towards creative children.** (Prof T J Rajendra Prasad and Dr K Jagannadha Rao), Department of Education, Nagarjuna University, Nagarjunanagar.

Home Science

1. Bhalgotra, Aruna. **Senescence: Problems and management, a study with special reference to the people of Jammu.** (Dr I J S Jaswal), Department of Home Science, University of Jammu, Jammu.

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(Number in bracket indicates available fellowships in that category).

B. INSTITUTIONAL DOCTORAL FELLOWSHIPS are tenable at :

(1) Sardar Patel Institute of Economic and Social Research, Thaltej Road, Ahmedabad-380054, **(2)** G.B. Pant Social Science Institute, Jhusi, Allahabad-221009, **(3)** Institute of Public Enterprise, Osmania University Campus, Hyderabad-500007, **(4)** Institute of Economic Growth, University Enclave, Delhi-110 007, **(5)** Giri Institute of Development Studies, Sector 'O' Aliganj Housing Scheme, Lucknow-226020, **(6)** Madras Institute of Development Studies, 79 Second Main Road, Gandhi Nagar, Adyar, Chennai-600020, **(7)** A.N. Sinha Institute of Social Studies, Patna-800001, **(8)** Indian Institute of Education, 128/2, J.P. Naik Road, Kothrud, Pune-411029 **(9)** Centre for Social Studies, South Gujarat University Campus, Udhana Magdalla Road, Surat-395007, **(10)** Centre for Development Studies, Prasantnagar, Ulloor, Trivandrum-695011, **(11)** Centre for the Study of Developing Societies, 29, Rajpur Road, Delhi-110054, **(12)** Institute for Social and Economic Change, Nagarbhavi, P.O. Bangalore-560072, **(13)** Centre for Economic and Social Studies, Nizamia Observatory Campus, Begumpet, Hyderabad-500016, **(14)** Gandhian Institute of Studies, Rajghat, Varanasi-221001, **(15)** Centre for Studies in Social Sciences, 10 Lake Terrace, Calcutta-700029, **(16)** Centre for Multi-disciplinary Development Research, D B R Road, Dharwad- 580001.

Forms for Institutional fellowships may please be obtained from the concerned Institute. For other fellowships request may be made at the address given below.

ELIGIBILITY : **1.** Post-graduation in social sciences with atleast 55 percent marks
2. Candidate must have cleared National Eligibility Test (NET) for Junior Research Fellowship in Social Sciences held by UGC/CSIR. **3.** Applicant must be registered for Ph.D. or should be able to complete the registration formalities within six months of joining the fellowship. **4.** Selected scholars (for Institutional fellowship) will have to be registered under the supervision of one of the faculty members of the respective institutes. Other things being equal preference will be given to scheduled caste/tribe candidates

AGE : The upper age limit for JRF is 35 years as on 1.8.98 (Relaxable by 5 years for SC/ST and women candidates). In exceptional cases where a candidate is found to have outstanding ability, the age limit may be relaxed marginally at the discretion of ICSSR.

LAST DATE for the receipt of completed application form is **24th August 1998.**

VALUE OF FELLOWSHIP : **A.** Selected candidate will be paid a fellowship amount of Rs. 2,500/- per month for the first two years and subsequently Rs. 2,800/- per month plus Rs.5000/- p.a. as Contingency Grant. Fellowship will be available for a maximum period of 4 years. **B.** Under the Salary Protection Scheme, employed scholar will get his/her salary for two years plus one time Contingency Grant @ of Rs. 5000/- P.A. The duration of this fellowship is two years.

APPLICATION FORMS : Further details and application forms can be obtained by sending self-addressed stamped Rs. 8/- envelope (25.5 x 20.5 cms.) to **Deputy Director (Doctoral Fellowship), Indian Council of Social Science Research, Post Box No. 10528, Aruna Asaf Ali Marg, New Delhi-110 067.**

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